ENGINEERING NEWS-RECORD

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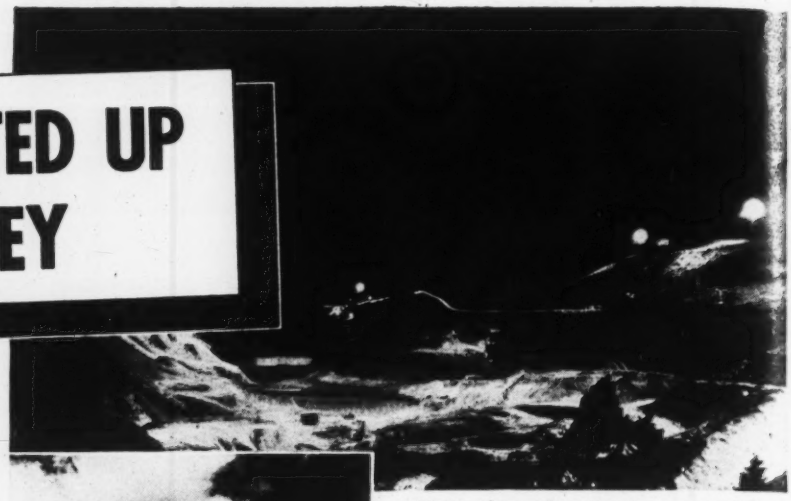
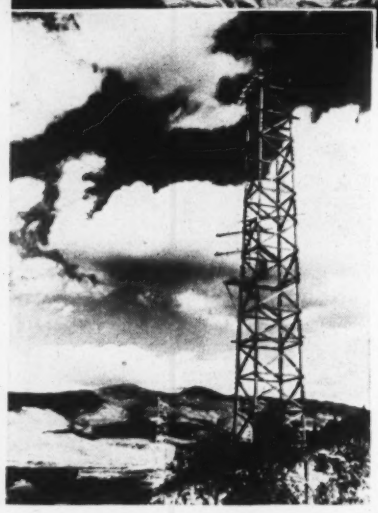
THEY LIGHTED UP A VALLEY

. . . and speeded up a job with safety



Night view of coffer-dam construction. Light from the five main batteries in the foreground enabled night shifts to accomplish just as much as day shifts.



(Left) Two 80-foot timber towers on the south, or left, abutment of the dam. Approximately 300 feet above the foundation of the dam.

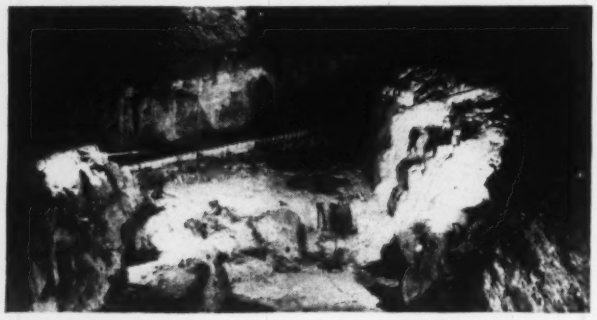
● The builders of Green Mountain Dam used a stationary system of lighting to illuminate the entire valley. Thus there was no need to string wires and install lights as construction of this earth-filled dam proceeded.

A day and night working schedule was maintained over the entire construction period of five years. Lighting facilities were independent of the progress of the work, approach roads were adequately illuminated so materials were moved safely and quickly to and over the site, and maintenance expense and expensive delays were minimized.

The Warner Construction Company of Chicago, accomplished this by placing the illumination problem in the hands of G-E lighting specialists, who studied the proposed project and came up with this novel system of illuminating the entire site. Five permanently located batteries comprising a total of 70 enclosed floodlights illuminated an area of 1,000,000 square feet. These G-E floodlights, with polished reflectors and clear glass doors, using 1500-watt, 125-volt Mazda lamps, were mounted on timber towers and poles approximately 300 feet above the foundation of the dam, and 40 feet above the finished crest. They were adjusted only periodically as the dam was brought up. Lights were controlled by a photo-electric cell that turned them on in the evening as natural light intensity dropped.

A U.S. Bureau of Reclamation project, Green Mountain Dam is one of the largest earth- and rock-filled dams in the world. Power generated here has helped supply Colorado's war industries. Good lighting was probably one of the important factors in preventing night-shift accidents and delays.

The General Electric Illuminating Laboratory studies outdoor lighting problems of all types, makes illumination tests of equipment, surveys projects for better outdoor illumination, and offers a thoroughly competent service that is always available upon request. General Electric Company, Schenectady 5, New York.



Two small G-E floodlights at the power-house site supplemented over-all lighting that was provided by the main batteries.

Looking down 300 feet to the coffer-dam construction. A battery of 10 G-E floodlights (Type L-68) in foreground.

GENERAL ELECTRIC

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News of the Week

ENGINEERING NEWS-RECORD • FEBRUARY 28, 1946 • VOLUME 136 • NUMBER 9

Huge increase in production of building supplies planned

NHA housing will increase demand for housing materials eight-fold—Lumber is biggest problem, but increases in brick, cast iron also needed—Subsidies considered

To meet the goal of placing 1,200,000 new homes under construction this year—recommended by Wilson W. Wyatt, administrator of the National Housing Agency (*ENR* Feb. 14, vol. p. 257)—methods of spurring a huge increase in the output of building materials are being planned.

Although Administrator John D. Small of the Civilian Production Administration has revealed that regulations drastically curtailing deferrable construction will soon be issued, the output of building supplies must still be increased greatly. This will require major emergency measures and may result in the payment of large subsidies to producers, according to present Washington thinking.

Wyatt's target is to start construction of 2,700,000 homes and apartment units by the end of 1947.

To reach this goal, 1,200,000 units must be placed under construction in 1946. Of this total, some 700,000 units will be conventional houses; 250,000 permanent prefabricated homes and dwellings assembled on-site from prefabricated parts and materials, and 250,000 temporary units, including 200,000 temporary re-use units from war and military housing and 50,000 trailers.

No figures are available as to how the program is to be divided between single family and apartment dwellings, nor as to distribution of the housing throughout the country.

In 1947, an additional 1,500,000 homes must be started if the schedule is to be met. Of this total, 900,000 units will be conventional types and 600,000 permanent prefabricated dwellings or homes assembled on the site from prefabricated parts. No temporary units will be built in 1947 as part of the program.

The goal of 1,500,000 homes to be started in 1947 is more than twice the production in 1941, when 715,000 units were built. And it far exceeds the record of 1925, biggest home-building year in U. S. history, when 937,000 units were started.

Eight-fold demand expected

In 1945, residential construction consumed about $400 million worth of building materials. Preliminary estimates by the NHA indicate that the program now planned will require $2 billion of supplies this year and $3.25 billion in 1947—or an eight-fold increase over 1945. Of the 2-year total of $5.25 billion, some $4.25 billion probably will be spent for conventional materials, Wyatt reports. While it is impossible at this time to determine accurately how much will be needed for premium payments, estimates indicate that about 10 percent of the total national outlay for conventional materials, or approximately $400 million, may be required.

Despite the drastic curtailment of new construction other than housing now planned by the CPA, that agency, in calculating total material requirements for 1946 and 1947 had to assume that a certain amount of new construction other than housing would be permitted to go ahead. It was assumed that about $5 billion of construction—as maintenance and repair—will be necessary in 1946 and that $5 billion of new construction other than housing will be permitted as an aid to reconversion. The drastic controls now planned, and expected to be issued early in March, may, of course, make both totals much lower.

Big increase in lumber output

Another CPA assumption in calculating the demand for housing supplies is that the greatest percentage of the homes built will be in the $6,000 to $7,000 cost range. A third assumption is that 100,000 of the prefabricated units to be built this year and 200,000 units in 1947 will have an exterior wall construction of other than plywood and lumber.

Although as yet only tentative, CPA estimates reveal that if the housing goal is to be met, the production of lumber

(*Continued on p. 6*)

Could produce 200,000 prefab houses

The number of firms in the U. S. engaged in producing prefabricated housing totals nearly 70 and these organizations have a combined yearly production capacity of 162,000 dwelling units, the Prefabricated Home Manufacturers Institute, Washington, D. C. reports.

If sufficient materials were available to permit two shifts to be employed, the capacity could be increased to 200,000 units, the institute added.

Administrator Wyatt's housing goal (*ENR* Feb. 14, vol. p. 257) calls for starting construction of 250,000 prefabricated units in 1946. If this program is to be met the prefabricated industry will need to expand its production capacity somewhat, but the greatest problem to be overcome is delivery of necessary materials at a greatly increased rate. Prompt delivery will also be exceedingly important in 1947, as the prefabricators are expected to start construction of 600,000 units next year.

A big increase in the rate of producing trailers will also be required if the housing goal is to be met. Wyatt's programs calls for 50,000 trailers this year. In contrast, the trailer industry is now operating at the rate of 15,000 trailers a year. However, it has the plant capacity to produce 100,000 units yearly, but is severely handicapped because of the shortage of materials and manpower.

Trailer manufacturers report that only 250,000 tons of materials, components and merchandise will be required to make 100,000 trailers. A single unit, which costs $2,000, can be made and completely equipped in four to six days if the production line is fully supplied.

NEWS IN BRIEF

In telegraphic form, here are latest news developments on the engineering and construction front during the week.

Sign of the times—Although *Syracuse, N. Y.*, has plans drawn for $2,442,565 of "vitally essential" projects, city fathers decided the work couldn't be done, set themselves to pare the list down to a maximum of $600,000 worth.

Building construction—The American Can Co. planned a $1,000,000 factory at Ft. Smith, Ark. . . . The Steel Co. of Canada awarded a contract for a $6,000,000 coking plant at *Hamilton, Ont.* . . . Northwest Airlines announced plans for an $8,000,000 group of buildings, including a headquarters office, hangars and service structures, at *Minneapolis, Minn.* . . . *Florida's* three state-supported colleges launched a $2,000,000 building program at their campuses. . . . Frederick Loeser and Sons Co. awarded a contract for a $500,000 store building at *Garden City, N. Y.* . . . The Union Bag and Paper Co. awarded a contract for a $1,500,000 factory at *Savannah, Ga.*

Power—The California-Oregon Power Co. asked permission of Oregon's Hydroelectric Commission for a $3,375,000 power development on the North Umpqua River in *Douglas County, Ore.*, where it plans to build a 35-ft. high earth dam, tunnels and a powerhouse. . . . The Pennsylvania Power and Light Co. announced plans for a $65,000,000 construction program that will include a 140,000-kw. steam plant at *Sunbury, Pa.*

Highways—Maryland will ask bids "very soon" on the first units of a $25,000,000 1946 roadbuilding program. . . . *Oklahoma* expects to get six major road programs under way this year, calling for expenditure of $27,482,000. . . . *Tallahassee, Fla.*, will pave 8 to 10 miles of streets annually. . . . Residents of *Chapleau, Que.*, and *Pembroke, Ont.*, seek a new $1,000,000 bridge oyer the Ottawa River. . . . Construction of the first half of the $3,000,000 Cabrillo Freeway at *San Diego, Calif.*, started with groundbreaking ceremonies Feb. 6. . . . *Georgia* will improve 909 miles of roads during 1946, at a cost of $30,297,000. . . . The *Pennsylvania* State Highway Department plans for a $500,000 grade crossing improvement at *Paxinos*.

Sewage disposal—An expansion of existing sewage plant, to cost $4,460,000 was recommended for *Toledo, Ohio*. . . . Fifty-one *Washington State* municipalities have engaged engineers to prepare plans for sewage disposal systems or treatment palnts estimated to cost $21,557,085, according to the state Pollution Control Commission.

Miscellany—The *Long Island* (New York) State Park Commission announced plans for a long-range, $22,000,000 improvement program, to include some parkway construction. . . . A survey of underground water resources in *Nevada* will get under way shortly. . . . Surveys of the harbor of *Baltimore, Md.*, will start soon, preliminary to a $3,500,000 port improvement program. . . . The Port Authority of *Boston, Mass.*, revealed plans for an $8,000,000 ocean terminal building. . . . *Idaho Falls, Idaho*, purchased 500 parking meters in the hope of relieving downtown traffic congestion.

Plan $3 million railroad terminal at Toledo, Ohio

Barring unforeseen obstacles, work on a proposed $3,000,000 Union Station for Toledo, Ohio will start about July 15, officials of the New York Central railroad assured city officers recently.

Appearing at a conference with George N. Schoonmaker, Toledo city manager, R. E. Dougherty, chief engineer, and J. P. Gallagher, architect for the railroad, said construction of the new terminal would require more than two years, in view of the current material shortages and the necessity for maintaining service during the construction. With receipt of the railroad's plans, City Engineer Clayton L. Piper said he would start his own plans for the city's contribution to the terminal immediately. The city will construct approaches, parking spaces, and a plaza at Knapp and Newton streets.

The new station will front 60 ft. along Emerald Ave., and the existing railroad tracks, and will include a separate express and mail building.

Calendar of Meetings

NATIONAL

National Society of Professional Engineers, conference of state presidents of member state societies, and board of directors meeting, Deshler-Wallick Hotel, Columbus, Ohio, March 29-30.

American Concrete Pipe Association, 38th annual convention, Edgewater Beach Hotel, Chicago, Ill., April 11-12.

American Society of Civil Engineers, spring meeting, Bellevue Stratford Hotel, Philadelphia, Pa., April 17-19.

REGIONAL

Southern Safety Conference, 7th annual meeting, Winston-Salem, N. C., March 3-5.

University of Utah, 7th annual Highway Engineering Conference, Union Building, University of Utah, Salt Lake City, Utah, Mar. 4-6.

Minnesota Section, American Water Works Association, Radisson Hotel, Minneapolis, Minn., March 14-15.

New Jersey Society of Professional Engineers, 1946 convention, Essex House, Newark, N. J., March 15-16.

Mississippi Valley Conference of State Highway Departments, annual meeting, Edgewater Beach Hotel, Chicago, Ill., March 15-16.

New England Section, American Water Works Association, Statler Hotel, Boston, Mass., March 21.

Indiana Section, American Water Works Association, Union Building, Purdue University, Lafayette, Ind., April 2-3.

Canadian Good Roads Association, annual convention, Chateau Frontenac, Quebec City, Canada, April 2-5.

Midwest Power Conference, 1946 meeting, Palmer House, Chicago, Ill., April 3-5.

Canadian Section, American Water Works Association, annual convention, General Brock Hotel, Niagara Falls, Ont., April 8-10.

Lumbermen's Association of Texas and Texas Lumber Manufacturers Association, 60th annual convention, Galveston, Texas, April 8-10.

Florida Engineering Society, 13th annual meeting, Jacksonville, Fla., April 25-27.

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ACI learns of wartime developments

Featured at the 42nd Annual Convention of the American Concrete Institute held in Buffalo, N. Y., Feb. 18 to 21, were many technical papers of significance in concrete design and construction, since this was the first opportunity available for somewhat conclusive reports on wartime innovations. In addition, two new ACI Standards were adopted.

The fullness of the program and the completeness of its coverage may be appreciated from the fact that at each of the six 3-hr. technical sessions from four to twelve papers, most of them illustrated with slides, were presented. Sessions were devoted, respectively, to new developments in concrete design and construction methods, entrained air, research now under way, and maintenance and repair.

At one session, papers on miscellaneous topics included observations of the effect of atomic bombs on reinforced concrete structures, studies of scaling compounds for curing concrete and research on dispersing agents. Abstracts of the papers presented at the technical sessions will be published in a subsequent issus of *ENR*.

Standards for precast units

Paving the way for rapid advances in precast concrete construction, the membership approved for adoption as an ACI Standard the "Proposed Minimum Standard Requirements for Precast Concrete Floor Units" (ACI *Journal*, Jan., 1946). Also adopted as an ACI Standard was the "Proposed Recommended Practice for the Construction of Concrete Farm Silos" (ACI *Journal* Jan., 1944, and revisions Jan., 1946).

The new president, Harrison F. Gonnerman, manager of the Portland Cement Association Research Laboratory, took over the reins from Douglas E. Parsons, chief of the Division of Clay and Silicate Products, National Bureau of Standards. Mr. Parsons, as a past president, automatically became a member of the Board of Direction, replacing Roderick B. Young of the Hydro-Electric Power Commission of Ontario.

Robert F. Blanks of the U. S. Bureau of Reclamation, former director-at-large, and Stanton Walker, director of engineering, National Ready Mixed Concrete Assn., who was re-elected, were seated as vice-presidents. Mr. Blanks' successor as director-at-large is Frank H. Jackson, Principal Engineer of Tests, Public Roads Administration. Harvey Whipple was reappointed secretary-treasurer. The only change in regional directors was the replacement of Myron A. Swayze, director of research, Lone Star Cement Corp., who had served in that capacity for the maximum time permitted, by Roy R. Zipprodt of the American Iron and Steel Institute.

In recognition of his long and distinguished service in the design of hydraulic structures, including some of the world's most notable dams, John Lucian Savage was awarded the Henry C. Turner Medal. Having served with the U. S. Bureau of Reclamation for 34 years and since 1924 as its chief designing engineer, during which time the Bureau designed Grand Coulee, Shasta and Boulder, the world's three largest concrete dams, Mr. Savage retired last April, but he has since been consulting engineer to the bureau, as well as to several foreign governments.

Medals awarded

The Leonard C. Wason Medal for noteworthy research was awarded jointly to Bartlett G. Long, consulting engineer of Pecos, N. M., Henry J. Kurtz of the U. S. Engineers, and Thomas A. Sandenaw, chemist, R. C. A. Victor Division, for a paper on field determination of the modulus of elasticity and flexural strength of concrete pavements. The Leonard C. Wason Medal for the most meritorious paper published in ACI *Proceedings* went to Clarence Rawhouser of the U. S. Bureau of Reclamation, author of "Cracking and Temperature Control of Mass Concrete" (ACI *Journal*, Feb., 1945). Lewis H. Tuthill, also on the staff on the U. S. Bureau of Reclamation, won the ACI Construction Practice Award for his description of operations in the concrete ship program of the U. S. Maritime Commission (ACI *Journal*, Jan., 1945).

Wisconsin capital city to extend sewer lines

Madison, Wis., will spend more than $2,000,000 to increase present plant facilities and equipment of its water and sewage systems to serve its suburban areas.

The two large lakes that squeeze the city into a half-mile-wide dumbell shape in the center have forced residential construction to stretch far out on either side and along the lake shores. Suburbs now make extensive use of septic tanks, and many residents use backyard wells for water supply.

The metropolitan sewerage district commission said it would spend $1,250,000 to put down seven miles of interceptor piping and construction and equipment of two booster stations. The city water department has already started work on extension of lines.

Maine rushes rebuilding of collapsed bridge span

Reconstruction of the Enfield-Howland bridge, a span of which collapsed recently (*ENR* Jan. 31, vol. p. 157) has been given first priority by the Maine State Highway Commission.

Plans were drawn in 1941 for a steel through truss type of structure of five 180-ft. spans. However, this design was made for highway loading only, and the Maine Central Railroad recently requested an estimate on a bridge that would carry railroad tracks as well as highway traffic.

Meanwhile, the state reported that an offering of $15,000,000 in bonds to finance the proposed Kittery to Portland 4-lane turnpike was oversold when offered to investors recently. Engineers said that proceeds of the sale would be used to build the first unit of the turnpike, from Kittery to Fort Kent, under an authority created by the 1945 legislature. The finished road would be an express highway about 45 miles long, with 24 ft. roadways separated by a minimum 26-ft. medium strip and 10-ft. shoulders.

Los Angeles, Calif.—Construction is under way on the $14,000,000 Terminal Island Freeway, in Los Angeles-Long Beach, Calif., harbor. The project was reinstated by the Navy Department after it had been dropped because of its wartime origin, following an appeal to Secretary of the Navy Forrestal by officials of the two harbor developments who flew to Washington for that purpose.

The first unit is a lift bridge, nearly 700 ft. long and 272 ft. wide.

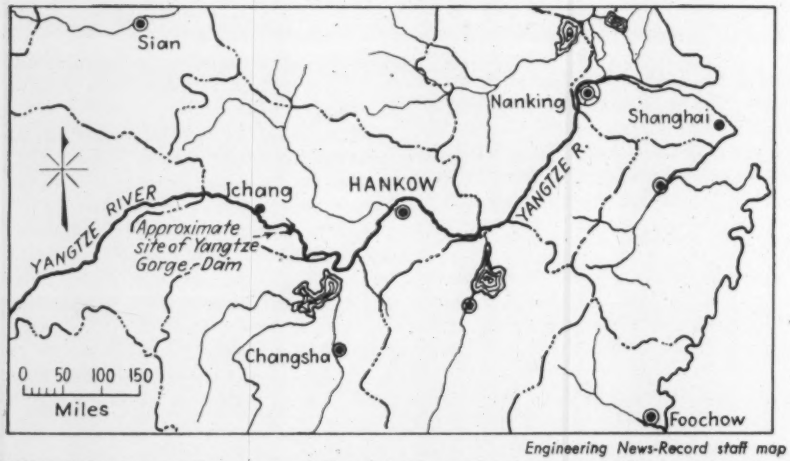
Quarter of Jap-internee builders not yet home

Of 1,253 civilian construction workers interned by the Japanese after capture of Pacific islands in 1941 and 1942, still 284 have not returned to their homes in the United States, a report by the Pacific Island Employees' Foundation of Boise, Idaho, shows.

Of 1,145 employed at Wake, 894 have returned home. Another 113 died in prison camps, 99 were executed on Wake, two are believed to have been executed on Truk, 34 were killed in the siege of Wake, one died en route to the United States, and one is being held as a suspected war criminal by Gen. Douglas MacArthur's headquarters.

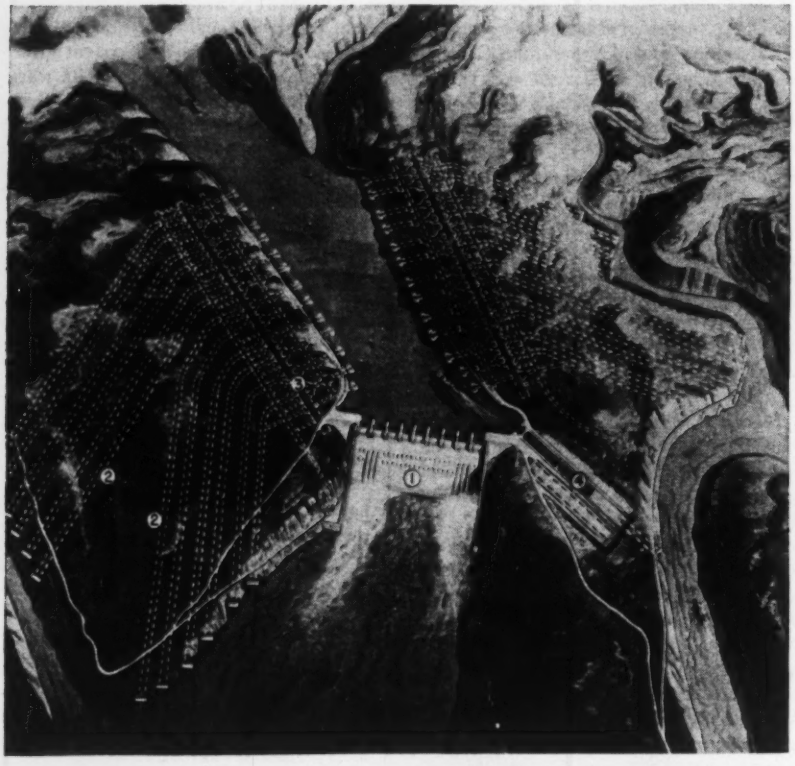
The foundation was formed in 1942 to help care for families of the men taken prisoner.

China Plans an Unprecedented Dam for Power, Irrigation and Navigation



Engineering News-Record staff map

Within 300 miles of the proposed Yangtze River Dam is a population greater than that of the entire United States.



From the sides of a reservoir formed by a 750-ft. high concrete dam across the Yangtze gorge (1) twelve diversion and power tunnels (2) will discharge into the valleys of tributary streams on each side of the river. In rock chambers above these tunnels (3) will be 48 generators of 108,000 kw. capacity on each side of the river. The navigation lock (4) connects by tunnel with the side channel at the right.

Plans for a dam, power plant and navigation facilities of unprecedented size on the Yangtze River in China are now being prepared by the U. S. Bureau of Reclamation under a contract recently negotiated by the National Resources Commission of China (*ENR* Dec. 13, 1945, vol. p. 771 and Jan. 3, 1946, vol. p. 1).

The dam will form a reservoir 250 miles long with a capacity of about 50,000,000 acre-ft. for the storage of flood water to irrigate 10 million acres of land. The total cost of the project is roughly estimated at $1,000,000,000.

Plans now are being made to use the power for development of the many natural resources of the region, which now is without any sources of cheap power.

Key element of the project is a dam 750 ft. high across the Yangtze gorge below Ichang, 24 ft. higher than Boulder, and requiring 15,000,000 cu. yd. of concrete, or 50 percent more than the mass of Grand Coulee Dam. Ultimately, it is proposed to install 96 hydro-electric generators of 108,000-kw. capacity in chambers cut in the canyon walls. These 96 units would give the plant a total capacity of 10,368,000 kw., or more than three times the combined capacity of the plants at Coulee, Shasta and Boulder dams.

Arrangements for naviation

But the most revolutionary of the many elements of this wholly unprecedented project are the proposals for getting ships past the dam. Alternative designs for the navigation facilities have been proposed, as shown in the accompanying sketches. In both, a ship tunnel 200 ft. high and of width sufficient for a ship to navigate is to be driven from a side channel below the dam to a shaft rising to pool level back of the dam, a distance of about 800 ft. Connecting with the top of this shaft, and separated from it by lock gates 200 ft. high, will be a ship basin giving access to the reservoir.

Under one scheme, the deep shaft would be used as a lock, being closed off from the 200 ft. high tunnel by lock gates (subjected to a head of about 750 ft.) so that it could be filled to raise a ship hydraulically to the upper pool level.

Under the other scheme a great gantry crane would be used to lift ships up the shaft or to lower them from the upper-

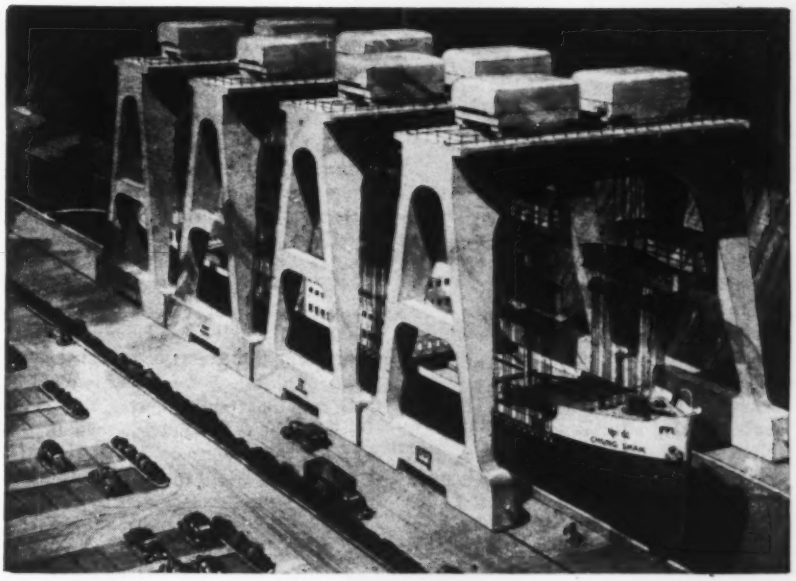
pool level to the level of the river below the dam. After lifting a ship to the top of the shaft, the gantry moves forward to set it in the lock at reservoir level.

If the latter scheme is adopted, ships operating on the Yangtze will be designed with framing and hangers adapted to this requirement. Sampans and junks will be lifted in a large corrugated metal tank.

Designs made in Denver

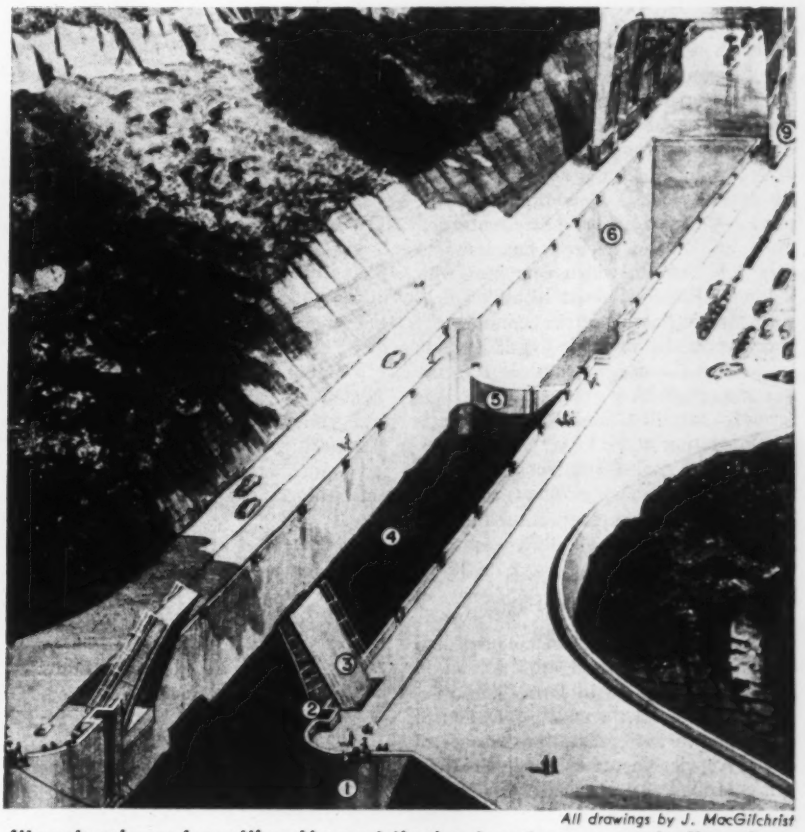
Design and planning work is being done at the Denver office of the Bureau of Reclamation under direct charge of Walker R. Young, chief engineer. Participating will be John Lucian Savage, until recently chief designing engineer of the bureau, who is acting as consulting engineer for both the United States and Chinese government.

China has paid the first installment of $250,000 on a $500,000 contract for bureau assistance in drafting plans, making hydraulic tests and cost estimates and reviewing preliminary studies. Chinese engineers and technicians paid by their own government are participating. Under terms of the contract with the Bureau of Reclamation, the United States Government is in no way obligated to assist in either the financing or construction of the project. It is also expressly provided that all normal bureau work has priority over the Yangtze Gorge project.



Gantry cranes will raise or lower specially designed ships from river level below the dam to reservoir level under one of the schemes for getting ships past the dam. The cranes will travel on tracks spanning the shaft and lock chamber.

View from the bottom of the 800-ft. deep shaft looking out through the 200-ft. high tunnel (2) by which ships will reach the shaft. If this shaft is used as a lock chamber, gates are to be installed at the end of the tunnel (1).



All drawings by J. MacGilchrist

Alternate schemes for getting ships past the dam have been proposed. Here shown are: The entrance (1) from the reservoir to the upper lock chamber (4), hydraulicly operated lock gates 200 ft. high (5), and the top (6) of the 800 ft. deep shaft to a tunnel at river level. This shaft will be used as a lock chamber or as a shaft through which ships can be raised or lowered by the gantry crane (9). Emergency bulkheads can be installed in the slots (2) near the bridge (3).

Plan huge increase in building supplies

(*Continued from p. 1*)

must be increased in 1946 to 36 billion bd. ft. and that an output of 38 billion ft. will be required in 1947. It is estimated that 4 billion ft. of this year's output and 2 billion ft. of next year's production will be required to replenish the supplies of wholesalers and other distributors. The work of filling the "distribution pipelines" will, of course, also require an important percentage of the 1946 output of other supplies.

Of the lumber production seen necessary for 1946 to meet all essential requirements, housing is expected to require 8.0 billion bd. ft., including millwork and flooring. Remainder of the 1946 total is divided as follows: Non-residential new construction, 5.2 billion; maintenance and repair work, 7.7 billion; lumber for industrial fabrication, such as construction of railroad cars and furniture, 4.7 billion; boxes, crating and dunnage, 6.4 billion; and replenishing "distribution supplies," 4.0 billion bd. ft.

Lumber production last year dropped to about 27.3 billion bd. ft., which is below 1939 and is far less than the 36.5 billion ft. output of 1941 and 1942. Moreover, lumber production during November of last year totalled only about 1.8 billion ft. or 6.8 percent below October, and a still lower production was reported in December because of bad weather and other difficulties. In addition, lumber stocks at sawmills and concentration yards at the end of 1945 amounted to only 3 billion ft., which compares with the normal total of about 10 billion ft.

Hardwood flooring is one material that is going to be exceedingly difficult to produce at the desired rate. During the war the production of this product was severely curtailed, and the industry is now operating at ⅓ to ½ capacity.

The 1946 goal for softwood plywood is 1.5 billion sq. ft., which compares with 1.8 billion sq. ft. produced in the previous peak year of 1942, according to CPA figures.

Goal is 5 billion brick

The necessary output of common and face brick is estimated at 5 billion in 1946 and 5.4 billion in 1947. These figures compare with a total production of 1.9 billion in 1945. However, because of an OPA price increase of $2 per 1,000 brick granted early last fall (*ENR* Sept. 27, vol. p. 399), production rose from 182,000,000 brick in June, 1945, to 245,000,000 in October and averaged over 250,000,000 brick during the last two months of 1945.

Required production of gypsum board is set at 4.1 billion sq. ft. in 1946 and 5.3 billion in 1947. Present manufacturing capacity is estimated at about 3 billion sq. ft. In addition to the present low production capacity, deliveries will be slowed by the shortage of paper liner material.

In revealing the estimated required production of building boards other than gypsum, it is pointed out that 1½ billion sq. ft. will be needed during each of the next two years for industrial purposes. With this assumption in mind, the total required production of this material is set at over 3.6 billion sq. ft. this year and 3.7 billion next year. The present manufacturing capacity is below 3 billion.

A big increase in both manufacturing capacity and output of cast iron radiators will also be required. CPA figures indicate that 70,000,000 sq. ft. will be needed in 1946 and 3,000,000 sq. ft. above this amount the following year. In contrast, production last month totalled only 1,931,000 sq. ft. In addition to increasing production capacity, the shortage of pig iron and scrap will be a major bottleneck to be overcome, since a substantial increase in the production rate of merchant pig-iron will be required.

Other estimates show that between 465,000 and 620,000 tons of cast iron soil pipe will be needed this year and from 465,000 to 680,000 tons next year. The range in the estimate for each year is large. This variation results because it is undecided whether or not to put back in force the war regulation that required cast iron pipe to be used for only the first 5 ft. from a dwelling.

Building block requirements are calculated at 735,000,000 block this year and 920,000,000 in 1947. The current manufacturing capacity is not known, but it is probably little more than the present production rate of about 350,000,000 block.

Production of bath tubs will also need to be increased greatly. The 1939 production totalled 887,000 tubs, the 1941 output 1,177,000 tubs, and that for the last quarter of 1945 only 113,000 units. Needs for 1946 are calculated at 1,400,000 tubs and those for 1947 at 1,860,000.

Three-point program planned

To achieve the necessary expansion in the production of both conventional and new materials three major steps have been outlined by Wyatt. These are:

(1) All existing plants must be brought to top operating capacity as speedily as possible.

(2) Unused war plants and other facilities must be converted for the production of new as well as conventional materials. (It is expected that some surplus plants will be used for prefabrication work.)

(3) Construction of new capacity must be undertaken to the degree necessary to meet the requirements of the program.

To increase greatly the capacity to produce building materials, Wyatt has made major recommendations regarding the use of subsidy payments. He has recommended, "The additional cost and risk of expansion, whether through increases in output, or additions to existing plants, conversion of old ones, or construction of new ones, must—when clearly necessary—be shared by the government just as it was during the war. This requires more rapid than usual amortization of the plant for tax purposes; government underwriting of sales of new-type materials at prices sufficient to cover developmental costs; adequate short and long-term government credit, where private capital is not available, and premium payments in selected cases for increased production.

"Premium payments will also be necessary in cases where production costs rise due to the payment of overtime, or the addition of another shift," Mr. Wyatt further recommends. "In addition to premium payments for conventional materials we must recognize that proportionately greater risks will be encountered in production of new materials. One billion dollars worth of new or substitute materials will be required. It is estimated that approximately 20 percent of the amount, or $200 million, will be required to encourage increased production."

Approve deferring federal construction

Deferment of federal construction that would compete with veterans' housing for labor and materials has been agreed upon by the Inter-departmental Committee on Construction, Maj. Gen. Philip B. Fleming, chairman, said Feb. 19.

The committee is composed of federal departments and agencies interested in construction.

At the same time, however, the group supported increased construction of community facilities such as streets, sewers, water supply systems, that will be needed to permit the housing program to go forward.

Pointing out that only an "insignificant" drain on housing labor and materials would result, the committee added it was in favor of continuing highway, reclamation, river and harbor and flood control projects.

AGC concentrates on housing problems, offers solutions for easing present jam

Speakers score government "tinkering", cite Philadelphia as example of solutions possible—W. S. Bellows new president

Constructive suggestions by the Associated General Contractors of America for assisting and implementing the government's proposed veterans' housing program came out of the organization's 27th annual convention, Feb. 18-21, at Chicago.

Staff and committee reports, speakers at the various sessions, discussions on the floor and in hotel rooms, and resolutions approved by the convention all contributed practical recommendations to help effectuate a realistic housing program in the present emergency.

By resolution the convention endorsed the letter of Feb. 12 from H. A. Dick, retiring president, to President Truman (*ENR*, Feb. 21, vol. p. 267) pledging the aid of the membership toward achieving the housing objectives in conformity with a well integrated program of essential construction. Another resolution set in motion the machinery for a spot survey by the association of actual needs in areas of greatest housing shortage, using the facilities of the 94 local AGC chapters and branch offices for this purpose.

The group elected Warren S. Bellows, president of the W. S. Bellows Construction Co., Houston, Texas, as president for 1946.

Aids to housing

Suggested means for carrying out the housing program ranged all the way from (1) complete reliance on private enterprise, through (2) a return to the priorities control of L41, to (3) a channeling of the bulk of building materials for a brief period by government directive, if necessary, from the manufacturing plants to the centers where housing needs are greatest.

Steps toward relieving the shortage of skilled mechanics by vigorous, intensified apprentice training programs were detailed and discussed at several sessions.

"What would help obtain greater production of housing is less tinkering with new schemes and more sincere effort to free the industry from restrictions—principally government restrictions—which are now hampering the production of materials and the establishment of sound industry wage scales," said H. E. Foreman, managing director. "Government officials have a legitimate interest in seeing that adequate housing is available for veterans and others. It is hoped that their interest will result in the adoption of policies which will expedite rather than hamper construction."

One city's solution

A concrete suggestion for meeting a community's critical housing needs came from the General Building Contractors Association of Philadelphia.

In cooperation with the home builders' group in the same city, the chapter has

W. S. Bellows, new AGC head

analyzed the 22,000 applications for housing in Philadelphia and determined that 10,000 new dwellings would take care of all actual needs. The Philadelphia Home Builders Association reported that with adequate materials and labor its members can produce 10,000 houses in a year, or even in six months, at prices in the range of a standard model which would sell for $6,750.

To build up an adequate stock of building materials in each critical area sufficient to meet actual housing needs in one year, the Philadelphia group proposes that 90 percent of all manufacturers' deliveries for three months be channeled to the 100-150 centers where real hardship exists. This channeling would in three months give them sufficient supplies for 10,000 houses, excepting for plumbing fixtures and soil pipe, on which accelerated production would be necessary.

Skilled craftsmen

Philadelphia can obtain brick required for its 10,000 houses from plants within short-haul distance, but its 536 journeyman bricklayers are totally inadequate for the program. If the local trades unions could not furnish the necessary craftsmen, the home builders would have to try to find them elsewhere.

Richard J. Gray, chairman of the executive council, Building and Construction Trades Department, American Federation of Labor, offered some figures of manpower increase on a national scale for his own bricklayers' union. He said that since V-J Day the union had added more than 6,700 journeymen to its roster, including some 3,400 new members and more than 3,300 veterans returned from military service.

". . . Construction of housing" Mr. Gray said, "is the greatest need of the moment. But other construction is essential to any housing development—the building of sewers, the laying of pipe and the provision of the many services that are inseparable from the building of homes."

Apprentice training

Gray reported nearly 800 apprentices added in the 4½ months between V-J Day and the first of the year, with the rate of additions increasing each month. He reported that more young men would like to enter the trade than the number for whom jobs can be found.

W. J. Barney, chairman of the AGC Committee for Apprenticeship said that New York City bricklayers are walking the streets today, despite the huge building program now in active or prospective stages. Barney gave a step-by-step account of the procedure for activating an apprentice training program as prescribed by the Veterans Administration.

In Michigan a successful program is under way, according to Henry A. Reniger, Lansing, president of the Michigan chapter. Apprentices are paid while undergoing an accelerated schooling, 40 hr. a week, which completes this portion of the training quickly to release the men for full-time production on the job. The pay comes from a scholarship trust fund built up by a charge of ½ of 1 percent on the contractor's on-site payroll, passed on to the owner. Many owners have agreed to accept this charge, and the OPA has approved it as a legitimate cost item for contractors.

Directive delayed

It was reported to the convention that the government directive to effectuate the proposed housing program would be delayed until the first week in March or possibly until March 15. The Civilian Production Administration, it was said, needs to recruit a staff to administer the order before the regulation goes into effect. At present CPA is said to have only 40 men on its staff for this work, all of them in Washington. The War Production Board regional offices which

(*Continued on p. 8*)

AGC concentrates on housing problem

(*Continued from p. 7*)

administered L41 have all been closed.

John L. Haynes, chief of the construction division, U. S. Dept. of Commerce, in reply to a question stated that he formerly had under him a staff of 500 men in his previous position as head of the construction bureau of WPB, in charge of L41. He estimated that 400 men would be needed to administer the proposed housing order.

Partly because of the projected housing program, Haynes reported an upward revision of the Department of Commerce estimate of new construction for 1946 from the previous figure of $7.5 billion to nearer $9 billion.

Construction wage rates

James D. Marshall, assistant managing director of the AGC, made it clear that all construction wage increases must still be approved by the Wage Adjustment Board. President Truman's "easing the line" order makes no change in conditions of employment on construction; it does not mean that construction wages will be increased 18 percent or any other percentage except as the WAB approves individual applications.

Construction equipment loss

G. K. Viall, vice president, Chain Belt Co., told the convention that the steel strike had caused a one-month loss of production in construction equipment. Some time will elapse before steel deliveries can be resumed. When they are restored, it will take a manufacturer another month to regain the productive efficiency which had been attained at the time when the strike began.

In the enforced absence of Frank B. McBath, Portland, Ore., President of the Associated Equipment Distributors, Carol F. Winchester, executive secretary of the AED, delivered a paper in which McBath recommended that manufacturers scrap dies and patterns for repair parts of discontinued models within 15 to 18 years after each model goes out of production.

Highways to go ahead

M. J. Hoffmann of Minnesota, president of the AASHO, brought the convention up to date on the highway construction program. In view of the seriousness of the present housing shortage, there can be no question but that construction of homes must have first priority, he said. On the other hand, highway construction will cause little interference in the housing program except in isolated cases of manpower shortages.

Actually, only a negligible amount of critical building materials needed for housing are required in highway construction according to a recent study of the FWA, declared Mr. Hoffmann. Similarly, little roadbuilding equipment can be used advantageously in building homes, and neither can experienced highway construction personnel be readily converted into craftsmen needed in home building. Thus, any proposed restrictive order on road building will do relatively little to help the housing shortage yet at the same time it might do unjustifiable harm to the highway program.

Admitting that the immediate outlook for extensive highway work during the current year does not appear overly bright, Mr. Hoffmann warned the contractors that the industry must not lose sight of the urgent need for the new program, for which plans have been completed and funds made available. He viewed the recent settlement of the strike in the steel industry as a turning point in the solution of many of our construction problems.

In his annual report to the Highway Contractors' Division, Harry J. Kirk of the Washington, D. C. staff, stressed the need for a vigorous prosecution of the road building program, despite the many uncertainties in materials prices and the further increases in hourly wage rates which may result in some further increase in bid prices.

Rural electrification

Any sitdown strike now by awarding agencies will result in higher prices later, warned Mr. Kirk. The highway contractor today has a larger investment in plant and equipment than ever before. Thus, the cost to him of enforced idleness is significantly higher. Moreover, a vacation in road letting in the hope of lower prices will cause many contractors to seek other lines of endeavor where competition is less and contract prices are higher, he said.

The concensus of the highway contractors was that the road building program should be maintained at a moderate rate and that the states should continue awarding the work based on the competitive system of construction by contract.

Despite a shortage of materials, particularly in timber line poles, the REA hopes to continue its rural electrification program this year at its present rate of connecting 20,000 new users of electricity per month, said J. K. O'Shaughnessy, chief of the Design and Construction Division, REA, Washington, D. C. Our program for this year calls for the installation of some 3,000,000 line poles, he said.

Mr. O'Shaughnessy told the assembled members of the Highway Division, of two recently adopted REA policies which have resulted in the lowering of contract bid prices from what they were a few months ago. Briefly, they are (1) the insertion of an "Escalator Clause" in contracts which fully protects the contractor against rising prices of the main construction materials after the date of letting, and (2) the acceptance of amendments to contracts permitting reimbursement of the contractor up to 90 percent of the cost of materials upon their being delivered to the site and before being installed.

Two other policies of the REA, as reported by Mr. O'Shaughnessy, were received with conflicting emotions by the assembled contractors. They warmly welcomed his announcement that there would be no more negotiation of contracts by REA, but that henceforth such work will be offered for competitive bidding, and awarded to the lowest responsible bidder.

On the other hand they were mildly opposed to his statement that the REA would sanction day-labor construction of a considerable amount of the work, by cooperatives, in order get the program under way, without delay. This, explained Mr. O'Shaugnessy, is due chiefly to the shortage of contractors equipped to do the work.

"Skyrocketing" prices hamper road builders

That states may have to enter the material and equipment manufacturing business in order to keep prices within the limitations of highway building was an opinion expressed by Hubert R. Gallagher, associate director, Council of State Governments, at a Feb. 14 conference in New York City of representatives from 15 states of the eastern region.

"State officials have been alarmed at reports that bids for new building construction have been anywhere from 60 to 100 percent higher than estimates and pre-war costs," he said. "Many states already have canceled projects because bids far exceeded estimates."

Mr. Gallagher also predicted that "skyrocketing" prices would reduce the billions of dollars appropriated for post-war highway development to the purchasing of about one-third of what is outlined in present plans. He added that private contractors were without recourse because of economic uncertainty.

Push local housing shortage solutions

While Wilson W. Wyatt, recently appointed housing expediter and administrator of the National Housing Agency, takes steps to implement his plan to alleviate the housing shortage (*ENR* Feb. 14, vol. p. 257) many states and cities are going ahead with their own plans toward the same end, as indicated by news items from various sections of the country which have already been published in these columns. Following are a few of the latest developments in the nation's housing picture:

Seattle, Wash.—The city council is considering two ordinances aimed at speedier processing of building permits that would allow the building inspector to grant permits when plans and specifications have been passed upon by qualified and licensed architects or engineers outside his staff, and to "farm out" the checking of building plans. Under present regulations, the city building department must check every project, with delays often resulting from the congestion.

Construction on more than 100 homes in this area has been stalled temporarily because of shortages of certain materials and lack of labor, a recent survey showed. Chief material shortages were reported in rock lath, soil pipe and a variety of metal items, while bricklayers and hodcarriers were scarcest in labor supply.

New York State—Housing projects totaling $3,475,000 in Rochester, Auburn, Schenectady, Syracuse, Mt. Vernon and Niagara Falls will go forward at once with receipt of approval by Governor Dewey. These upstate projects are for one, two and three-room apartments for 1,521 families in the six cities over what is expected to be a 5-year duration of the housing shortage.

Work is expected to get under way shortly on three separate projects in Rochester costing $850,000. Two of them call for renovation of abandoned schools for 71 dwelling units; the third is for transferring and remodeling Army barracks for 300 dwelling units.

A Schenectady project calls for alteration of two schools to provide 75 dwelling units at a cost of $225,000. At Auburn, the former Auburn Theological Seminary is to be converted into from 85 to 100 housing units.

The largest project involves 700 dwelling units on the Syracuse Air Base, to cost $1,500,000. Proposed alteration of Fort Niagara at Niagara Falls would give that area 100 units at a cost of $225,000.

Other reconversions for veterans' occupancy in New York State are: Cortland, 110 apartments by relocation of military units from Syracuse airbase or Fort Ontario, Oswego, cost $300,000; Elmira, 150 to 200 apartments from Syracuse or Oswego, cost $450,000 to $600,000; Batavia, 50 apartments from Syracuse or Oswego, cost $150,000; Corning, 50 units from Syracuse or Oswego, cost $150,000; Rye, 100 units, use of St. Benedict's Home or barracks from Farmingdale, N. Y.

Coquille, Ore.—Non-profit housing to combat the shortage of homes is scheduled here by an organization of 25 men. The group plans to build 25 one-story houses, five at a time, each to cost around $3,000. Two bedrooms, a combination living and dining room, kitchen and bath will be provided in each structure.

Chino, Calif.—Plans for early construction of some 1200 single-family dwellings as part of a $7,500,000 housing shortage relief program have been announced by Dr. T. A. Petzold, president of the Chino Chamber of Commerce, which is sponsoring the undertaking.

The project embraces acquisition of a 300-acre tract immediately north of Chino, including portions of various ranches. The chamber president declared that contracts are now being drawn with builders, engineers and designers, and plans include not only actual house construction, but also landscaping, installation of utilities, streets and sidewalks. The homes are being designed chiefly for industrial workers of the Chino-Ontario-Pomona area, with preference to veterans and their families.

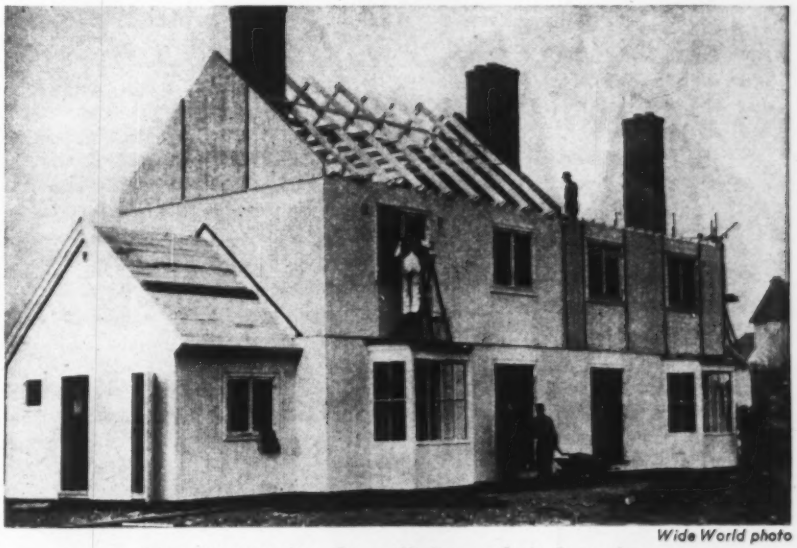
Pittsburgh, Pa.—This city will be given the opportunity to obtain a number of 2-story houses from Camp Edwards in Massachusetts, to provide housing for returning veterans, Mayor David L. Lawrence revealed Feb. 15.

Seeking 750 temporary housing units, the city previously had been able to get offers of only 1-story barracks, such as those used at Camp Reynolds near Meadville.

The 2-story types can be subdivided into 3-family units on each of two floors. They will simplify the problem of laying foundations and making sewer, water and gas connections.

Ordinances are being introduced in council to provide up to $200,000 for construction of the foundations and pipe lines.

Racine, Wis.—This city is trying to divert building materials and labor into home construction. The mayor has instructed the building inspector to deny all applications for building permits except for home building or other types of shelter, and for such industrial and commercial construction as is needed.



Wide World photo

England tries Swedish prefab housing

The first of a group of prefabricated timber houses manufactured in Sweden for use in Great Britain is here partially assembled on a site at Abbots Langley, England. The structures are part of Britain's strenuous efforts to ease an acute nation-wide housing shortage.

Swedish foremen supervised erection crews, putting up individual structures in one week. Crews were able to erect joists for an entire roof in one hour, and sidewalls for the first floor in about two and one half hours, according to British reports.

Corps of Engineers names new division heads

Lt. Gen. Raymond A. Wheeler returned some months ago from the China-Burma-India Theater to become head one of the greatest engineering organizations in the world, as Chief of the U. S. Army's Corps of Engineers.

Turning rapidly from war-fostered construction of military establishments, the corps now returns to a greatly-expanded "civilian" activity looking toward the improvement of living conditions for millions of Americans. To date, $125,000,000 has been appropriated for rivers and harbor work, and an additional $262,000,000 is contained in bills now pending in Congress. About $428,000,000 is to be spent on veterans' hospitals.

Gen. Groves

Gen. Crawford

Aiding General Wheeler in the multiple tasks of directing this work are Maj. Gen. Leslie R. Groves and Brig. Gen. Roscoe C. Crawford, assistants to the Chief of Engineers.

General Groves, who as head of the Manhattan District directed development of the Atomic Bomb Project, is a West Point graduate (1918) who served as assistant to the division engineer, Missouri River Division, and as an instructor and member of the War Department General Staff, before taking over the bomb work. He began a 4-year term as assistant to the Chief of Engineers Dec. 6, 1945.

General Crawford, also a West Pointer (1914), has served as district engineer at Detroit, Mich., Honolulu, Hawaii, and as division engineer of the Missouri River Division. For more than two years (1940-43) he was commandant of the Engineer School at Ft. Belvoir, Va., and held the additional title of Director, Real Estate, Repairs and Utilities, Seventh Service Command, before taking up his new duties in Nov.

The Division Engineers

Although changes are said to be pending in the Zone of the Interior organization of the Army as a whole, the peacetime organization of the "Engineer Department" is expected to continue on the basis of eleven divisions. The men who will head these divisions, are listed below. Ranks given are those held in mid-February.

Maj. Gen. Lewis A. Pick, division engineer, Missouri River Division, Omaha, Neb., recently returned to the division which he headed before the war, to direct the vast projects planned for redevelopment of the Missouri River Basin. A graduate of the Virginia Polytechnic Institute (1914) he was commissioned in the Engineers in 1917. Credited with the "Pick Plan" for development of the Missouri Basin, he was head of the division at Omaha from 1942 to 1943, when he was assigned to the China-Burma-India war theater, where he supervised, among many other projects, the construction and maintenance of the Ledo Road project from India to Burma in Burma.

Gen. Pick

Maj. Gen. Robert W. Crawford, recently named president of the Mississippi River Commission, is also division engineer, Lower Mississippi River Division, Vicksburg, Miss. A Military Academy graduate (1914) he served in both World Wars. During his Army career, General Crawford has served as district engineer, Honolulu, Hawaii; instructor at the Engineer School, Ft. Humphreys, Va.; district engineer at Washington, D. C. and New Orleans, La. Early in the war he headed S.O.S. for the U. S. Forces in the Middle East. In February, 1944, he became assistant chief of staff, G-4, SHAEF., European Theater of Operations, returning to the United States to take over the Mississippi River assignment late in 1945.

Gen. Crawford

Brig. Gen. Philip G. Bruton, division engineer, Pacific Division, San Francisco, Cal., is also acting division engineer of the newly-created Western Ocean Division which carries out work on Pacific island bases. Commissioned in the Corps of Engineers in 1920, he served with the 14th Engineers (Philippine Scouts) in various stations in the Philippine Islands and at Ft. William McKinley. In 1937, after graduation from the Command and General Staff school, he was named assistant to the district engineer, New York District, and later as district engineer at Buffalo, N. Y., the Newfoundland Engineer District and as executive officer of the North Atlantic Division, New York City (1943).

Gen. Bruton

Brig. Gen. James B. Newman, Jr., division engineer, South Atlantic Division, Atlanta, Ga., recently relinquished the post of air engineer in the Army Air Forces headquarters at Washington, D. C., to which he was named in July, 1945. A West Point graduate (1918) General Newman was in command of the 9th Engineer Command, which paved the way for Allied air offensives as victorious forces swept across France and Germany in 1944-45; his forces built all of the tactical airfields. Ordered to duty in October, 1941, in the office of the assistant chief of Air Staff at Washington, D. C., he later served with the 8th Air Force before taking over the 9th Engineer Command.

Gen. Newman

Brig. Gen. Douglas L. Weart, division engineer, New England Division, Boston, Mass., served during the past war as commanding general, Rear Echelon, China Theater, and theater deputy commander and commanding general, Tactical Forces, in the same area. A West Pointer (1915), his career has included assignments as: executive officer of the Engineer School, Ft. Humphreys, Va. (1924-28); district engineer at Savannah, Ga.; assistant to the president of the Mississippi River Commission (1932); assistant engineer of maintenance, Panama Canal, and as division engineer of the New England Division—the post he held when assigned to the eastern war theater.

Gen. Weart

Col. Clark Kittrell, division engineer, Upper Mississippi Valley Division, St. Louis, Mo., was chief of operations at Fort Peck, Mont., during construction of the Missouri River dam there, and after 1937 was district engineer. Graduated from West Point in 1917, his service included tours in the Hawaiian department, and as an instructor at West Point. He served as chief of operations at Vicksburg, Miss., from 1931 to 1933. In June, 1940, he was district engineer at New Orleans, La., and in 1942 became district engineer in the Panama Canal Zone. During World War II he served with distinction in the North African Theater of Operations.

Col. Kittrell

Col. Charles L. Hall, division engineer, North Atlantic Division, New York, N. Y., served overseas in the first World War, with the 12th Engineers and with the AEF general staff. Returning to the United States in 1918, he was an instructor at the Engineer School at Fort Humphreys, Va. His most recent assignment was as division engineer, Ohio River Division.

Col. Hall

Col. Beverly C. Dunn, division engineer, Ohio River Division, Columbus, Ohio, graduated from West Point in 1910, and served in the Panama Canal Zone and the Philippine Islands before the start of the first World War. A graduate of the Army War College and the Command and General Staff school, he served as chief of the finance division, Office of the Chief of Engineers, in 1929, and in 1932 became district engineer at Jacksonville, Fla. He became district engineer at Seattle, Wash., in 1940, and in March, 1942, was assigned to the North Atlantic Division. In February, 1944, he was named deputy chief engineer, SHAEF.

Col. Dunn

Col. Earl E. Gesler, division engineer, Middle Atlantic Division, Baltimore, Md., has been head of this division twice within the last three years. A West Point graduate (1915), he first assumed the post of division engineer of the Middle Atlantic sector in October, 1943, holding the post until Dec. 15, 1943, when he was assigned as engineer for the Third Service Command. He returned as division engineer in December, 1944, and remains at the post. Other service includes tours as district engineer at Rock Island, Ill., assistant district engineer, 1st New York Engineer District, and chief of the administrative division, Office of the Chief of Engineers.

Col. Gesler

Col. Edwin H. Marks, division engineer, Southwestern Division, Dallas, Texas, has headed the division since June, 1944, when he moved to the post after commanding the Engineer Replacement Training Center and the post at Fort Belvoir, Va. A Military Academy graduate in 1909, Col. Marks served overseas in the First World War, and on his return from that duty in 1918, was placed in charge of military mapping in the Office of the Chief of Engineers. He later served as district enginer at Duluth, Minn., Galveston, Texas, and of the Buffalo River and Harbor District, Buffalo, N. Y. He was Ohio River Division Engineer until April, 1941.

Col. Marks

Col. Dabney O. Elliott, division engineer, Great Lakes Division, Chicago, Ill., served with the engineer section, Army Force Headquarters, North Africa Theater of Operations, during 1943, and in 1944 was commander of the Army Service Forces Training Center, Fort Leonard Wood, Mo. A West Point graduate (1914), he was division engineer, Panama Canal, and Department Engineer of the Canal, until 1925, when he was re-assigned to duty in the United States. He became district engineer at Cincinnati, Ohio, remaining there until October, 1939, when he assumed command of the 18th Engineers at Ft. Devens, Mass. In February, 1941, he became chief of staff of the IX Army Corps, located at Ft. Lewis, Wash.

Col. Elliott

First Responsibility of Army Engineers

Under present conditions of stress, strain, and uncertainty in many industrial and business fields in the United States, the words expressed in behalf of the Corps of Engineers by Lt. Gen. Raymond A. Wheeler, Chief of Engineers, in an address at the recent convention of the American Road Builders Association, are worthy of emphasis.

General Wheeler said:

"To the Corps of Engineers it appears tremendously important that we maintain close and productive teamwork with the American construction industry.

"As Army Engineers, our first responsibility must always be to keep ourselves ready to carry out any construction needed wherever emergencies arise. As a part of this, we want always to be able to call upon the man and the special experience best qualified to build any particular type of project any new emergency calls for.

"We want to keep American builders strong and efficient, for we know that the strength of American builders is a measure of the strength of America."

MEN AND JOBS

M. G. Johnson, former city engineer of Indianapolis, Ind., has become engineering assistant to George A. Kuhn, chairman of the city's postwar planning commission. He was formerly a paving and highway engineer in Muncie, Ind.

Commdr. J. A. Dominy, USN (CEC) of Washington, N. C., has been assigned as assistant public works officer and assistant officer in charge of construction at the Marine Air Station at Cherry Point, N. C., succeeding **Commdr. William M. Gustafson,** who is entering private practice in Louisiana.

S. H. Bergstrom, formerly superintendent of highways, Livingston County, Ill., and associated with that office for the last 10 years, has been appointed county superintendent of highways for Grundy County, Ill., with headquarters at Morris.

George M. Clyde, irrigation consultant for the soil conservation service, has been appointed third division chief of irrigation and soil conservation service for the 13 western states, with headquarters in Utah.

Joseph F. Cairnes of Cambridge has been appointed by Governor Maurice A. Tobin as associate commissioner of Massachusetts public works to succeed **Joseph P. Dever,** resigned.

Edward Schmidt has been appointed deputy building commissioner and assistant city engineer of Belleville, Ill.

F. B. Robbins, recently with the bridge and building department of the Chesapeake and Ohio Railway, has been appointed staff assistant to the president of the Atlantic Coast Line Railroad, with headquarters at Wilmington, N. C. A graduate of Massachusetts Institute of Technology in 1923, he joined the C. and O. in 1924.

Conrad Schlegel, formerly of Chicago, recently appointed Rush County, Kan., engineer, has resigned to become Ness County engineer. **Clarence Cunningham** will now devote full time to the engineering job. **Edward Fiala,** recently discharged from the Army after several years service, will be his assistant.

N. B. Reardon, engineer of buildings for the Canadian Pacific Railway and an employee of the company for 33 years, is retiring.

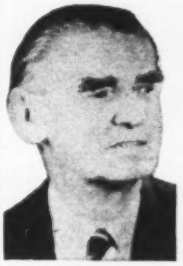
George T. Treadwell has been appointed chief engineer of the port of Seattle, Wash. He has been connected with the port for the last 18 years.

Francis H. Connors, of Chillicothe, Ohio, has been appointed city engineer in Van Wert, Ohio, succeeding **Lt. Col. Paul Gardner,** who resigned to join the Nickel Plate Railroad Co.

S. M. Hochman has returned to Minneapolis, Minn., after having been associated with eastern engineering firms and the Navy for four years. He has formed the Hochman Engineering and Sales Co.

Roy H. Shoemaker (left) engineer for Morrison-Knudsen Company, and C. O. Boggs, Idaho Power Engineer, discuss plans for a new power plant and diversion dam on the Snake River, near Hagerman, Idaho.

Retirement of **Melvin D. Williams** as district engineer in charge of the Alaska office of the Public Roads Administration, after 27 years as a Public Roads employee, has been announced.



Mr. Williams was graduated from Colorado Agricultural College in 1898, with a B.S. degree. In 1919, he was appointed highway engineer in the Bureau of Public Roads at Ogden, Utah, to supervise forest road surveys and construction. In 1925 he was transferred to the Alaska office of the Bureau of Public Roads at Juneau as assistant district engineer.

W. G. Ure, Woodstock, Ont., has been named engineer of North Oxford Township and the Township of East Zorra, Ontario.

Maj. James O. Butler, of Wichita, Kan., has been named post engineer at Camp Butner, N. C., after having served in a similar capacity at Camp Stewart, Ga., for the last three years.

John E. Brink and **G. A. Dunwoody,** civil engineers, have opened an office in Iola, Kan., as Brink & Dunwoody.

Frank Metyko, formerly of the U. S. Public Health Service, has become a consulting engineer at Houston, Tex.

The Stanley Engineering Co. of Muscatine, Iowa, announces that **Marvin O. Kruse** and **H. Sidwell Smith** have become partners in the concern.

James B. Wilson, formerly city engineer, recently became director of public works for Louisville, Ky., and **Wallace W. Sanders** became city engineer.

Sam E. Anderson, resigned recently as assistant county engineer of Bourbon County, Kan., to accept a post with the Oklahoma Highway Commission.

Edison Junqueira Passos a civil engineer of Rio de Janeiro, Brazil, has been elected executive vice-president of Aerovias Brasil, associated company of TACA Airways of Latin America. He has been a professor at the National University, president of the Brazilian delegation to the Inter-American Congress of Municipalities and president of the Engineering Club of Brazil. He is a graduate of the National School of Engineering and began work in the railroad and public utilities field.

Andrew MacGillivray, engineer for the Department of Public Works, Halifax, N. S., has retired after 37 years service.

W. G. Dyer, division engineer at Penticton, B. C., has been named engineer of tracks, Canadian Pacific R. R., Montreal, Que.

Capt. George F. Hopkins has been appointed chief of the operation division and contracting officer for the Seattle District U. S. Army Engineers. He succeeds **Maj. Leonard W. Bindon,** who has reverted to inactive status.

The Farwest Sales and Engineering Co., Inc., has been organized at Tacoma, Wash., by **John W. Kesinger, Mart C. Perkins** and **C. L. Crow.** Kesinger, a graduate civil engineer of Missouri School of Mines, has been practicing in the Midwest and Pacific Northwest for 14 years. Civil engineers associated with him are **W. C. McLennon** and **James C. Cronin.**

Stevenson & Rubens, consulting engineers, have opened a structural engineering office in Seattle, Wash. **J. H. Stevenson** has been a Seattle consulting engineer since 1915, while **Boris M. Rubens** previously was with The Austin Co.

H. C. T. Skinner is now acting Putnam County superintendent of highways, Hennepin, Ill.

George L. Sitton, of Charlotte, N. C., chief engineer of maintenance of way and structures for the Southern Railway System, has been transferred to Washington, D. C., to become assistant chief engineer, succeeding **James B. Akers.**

Sitton has been succeeded at Charlotte by **Theodore M. von Sprecken.**

Lee G. Warren formerly with Tennessee Eastman Co. and the Tennessee Valley Authority, has joined Ebasco Services in New York as general construction manager of all their operations. In this new position he will supervise construction on all their work and coordinate planning with construction.

Lee G. Warren

A graduate of Sheffield Scientific School (Yale) in civil engineering, Mr. Warren was project manager at Chickamauga, Watts Bar, Cherokee and Douglas dams for TVA; and assistant works manager for Tennessee Eastman Corp.

Back to civilian activity

Edison S. Johnson of Coats, N. C., a graduate of North Carolina State College and recently discharged from the Army with the rank of major after serving in Germany, has been named assistant city building inspector at Durham, N. C.

John S. Bennett, lieutenant-colonel, engineering officer with AMG, has resumed his post as supervisor of operations at the University of North Carolina, Chapel Hill, N. C.

Victor A. Jost, sergeant, is again with the state highway department of Delaware after his return from service in Germany and Austria.

George M. Stiers, lieutenant CEC, USNR, has been released to inactive duty and is now connected with the Amis Construction Co., general contractors of Oklahoma City, Okla.

Tally M. Neel, major, has returned to Charlotte, N. C., on terminal leave after serving 63 months in the Army.

James M. Gordon, major, has resumed his work as designing engineer of bridges for the state highway department of Delaware.

J. H. Beatty, who relinquished the post of county engineer of Grey County, Ontario, Can., for military service overseas, has been discharged from service and has resumed his former position.

W. H. Culimore, who was an officer in the Corps of Engineers, for three years, two of which overseas, has been appointed airport engineer for the Maryland Aviation Commission.

Charles E. Billion, colonel, has been appointed commissioner of public works at Syracuse, N. Y. He was colonel with the Amphibian Forces and helped take the Third Army to France.

D. W. Morrison, colonel, Corps of Engineers, has been head of the design branch of the Sacramento, Calif., USEO, and will continue on the same job as a civilian.

The following engineers have returned from the armed services to the Bureau of Engineering, Chicago. Division of Water Purification: **T. Donahue,** colonel, sanitary engineer; **Harry Berggren,** private, assistant engineer; **William Hennessey,** captain, junior engineer; **Homer M. Cronk,** chief ships fitter, U. S. Navy, engineering draftsman (bridges); **Wilbert Anderson,** warrant officer, C.E.C. (U.S.N.), bridge designing engineer; **Lt. Herbert E. Hudson,** filtration engineer; **George W. Kohout,** chief petty officer, U.S. Navy, structural designer; **Woodrow W. Fisher,** lieutenant, assistant engineering chemist; **Harold Mortensen,** S. 1/C., U.S. Navy, draftsman.

L. O. Williams, major, has resumed as director of the division of public health engineering and sanitation in the Wyoming State Health Department after serving in the Sanitary Corps of the Army. **W. V. Leonard,** who served in Mr. Williams' position during his absence, will become head of the Division of Industrial Health of the state health department.

Colin Campbell, brigadier general, formerly Minister of Public Works of Ontario, who resigned to join the Royal Canadian Engineers, has returned and is now acting as consulting engineer at Toronto, Ont.

Oliver A. Lewis, lieutenant colonel, has been named resident engineer in the Boise, Idaho, area office of the Army Engineers. Now on terminal leave, and until recently on the district Army engineer staff at Portland, Oregon, he was previously in charge of the Boise office.

William C. Abernathy, captain, after 39 months overseas, has been engaged by Houston, Tex., as designing engineer on the San Jacinto water supply dam.

L. C. Reese, recent Seabee, is now with the Associated Contractors and Engineers, Houston, Tex.

David Standley, commander, CEC, USNR, is now with C. Frederick Wolfe, engineer and constructor, Brooklyn, N. Y.

E. G. Wernentin, lieutenant colonel, who served with the Corps of Engineers on Gulf Coast defense installations, the atomic bomb plant in Washington and as executive officer for the Air Engineer, Headquarters Far East Air Force in the Philippines, has returned to the C. F. Lytle Co., general contractors, Sioux City, Iowa.

Jesse M. Page, Jr., of Raleigh, N. C., has opened an engineering office there after his release from the Navy. He served 20 months as an officer in the Civil Engineering Corps at the Naval Air Station, Kohulue, in the Hawaiian islands.

James D. Baldwin, first lieutenant, Field Artillery, is now administrative assistant in charge of personnel of the Illinois highway division.

Walter H. Edwards, Jr., captain, is back with his father W. H. Edwards, to manage the Edwards Engineering Co., Indianapolis, Ind.

Vincent S. Bennett, colonel, on terminal leave, has been appointed on the mayor's advisory housing committee at Rochester, N. Y.

ENGINEERING SCHOOL NEWS

Fluid mechanics fellowship at University of Minnesota—ASCE establishes awards for Latin American civil engineer graduates

There has been established under the sponsorship of Standard Oil Co. a fluid mechanics fellowship in the St. Anthony Falls Hydraulic Laboratory of the University of Minnesota. The value of the award is $1500 annually, and the fellowship may be extended to two years if warranted by the progress of the recipient and the time required to complete his research.

The recipient will get $1000. The remaining $500 will be used to pay the tuition and fees in the graduate school of the university, and to pay for the cost of special apparatus required. The fellow will be a full-time graduate student, and his work will be supervised personally by the director of the laboratory. His thesis is to be on some subject in the general field of fluid mechanics. That subject may be selected by the student in consultation with the director of the laboratory and to the general satisfaction of Standard Oil Co.

Applicants for the fellowship should have a basic training in fluid mechanics and qualify for entry into the graduate school of the University of Minnesota as a candidate for an advanced degree. Forms for application may be obtained by writing to the Director, St. Anthony Falls Hydraulic Laboratory, University of Minnesota, Minneapolis, Minn. Although the closing date for receiving applications has not been definitely established, it is recommended that application be made at an early date.

Establishment of a group of awards for Latin-American university civil engineering graduates has been announced by Col. William N. Carey, secretary and executive officer of the American Society of Civil Engineers.

A fund of $1,600 has been turned over to the society by L. F. Harza, Chicago consulting engineer, for use in providing entrance fees for junior membership in the society, first year's dues and a society badge for selected, qualified engineer graduates. No more than eight such memberships will be awarded in any one year, nor more than two to any country annually.

Mr. Harza, who was consulting engineer for the Uruguayan government on its Rio Negro hydro-electric project, established the fund to further good neighbor relations and to stimulate Latin-American interest in the society. Selection of candidates is to be made for outstanding scholarship, personality and interest in Pan-American affairs.

Dean Thorndike Saville of the College of Engineering of New York University has announced that Irving V. A. Huie, President, Board of Water Supply, City of New York, will present the lectures in the senior civil engineering course on public works organization and administration during this term. Commissioner Huie, an alumnus of New York Universty, 1911, served as Commissioner of Public Works under former Mayor Fiorello H. LaGuardia for ten years prior to his present connection with the Board of Water Supply.

The Tufts College, Mass., engineering school is taking an active part in the drive to raise a $100,000 fund for a library building dedicated to the memory of Tufts alumni who gave their lives in the last war and previous ones. The money is expected to be raised by June. The memorial building, an addition to Eaton Memorial Library, will house a "golden book" containing the names of all Tufts men who have served in the wars.

Texas college buildings to cost $15,000,000

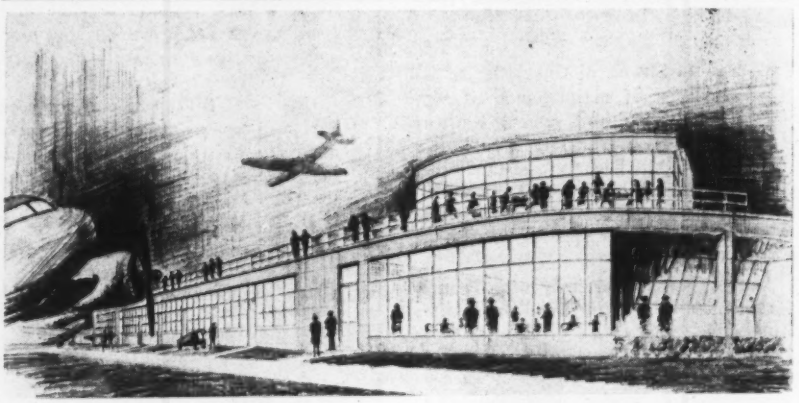
A constitutional amendment authorizing University of Texas regents to invest $15,000,000 of the school's endowment in bonds to finance new buildings will be proposed next year.

Of the amount, $10,000,000 would be spent for buildings at the university at Austin, and $5,000,000 for Texas A. & M. College at College Station. Directors of the two institutions recently agreed to support this program, and to assist other state schools in obtaining financial support from direct appropriations.

Under the Texas constitution, the University Permanent Fund cannot be invested in bonds but by special amendment regents could buy the school's own bonds.

Oklahoma City, Okla.—Plans for a $2,000,000 Bizzell Memorial Library building at the University of Oklahoma, at Norman, along with specific needs of the institution are presented in the first formal statement of the plans of the University of Oklahoma Foundation.

In the statement President George L. Cross, points out the need of such a building and stresses the fact that money appropriated by the state legislature will have to be used for construction of class rooms, laboratory, service buildings, etc.



Extensive glass areas used at Toledo airport

The administration building at Toledo, Ohio's, new municipal airport will feature extensive use of glass to provide unobstructed views for visitors and waiting passengers.

Clayton L. Piper, city engineering commissioner, said the rectangular building will incorporate 14,000 sq. ft. of glass in its sidewalls, to give complete vision over the field's runways, which form a hub at the structure's site.

The building will be 250 ft. long, one story high, excepting on the west end where a second story will accommodate a dining room. In addition to the vistas provided by the glass walls around the building, an open-air observation platform is to be provided on the roof.

Symbolizing Toledo's position as a major center of glassmaking, the "window walls" will incorporate Libby-Owens-Ford "thermopane", an insulated glass pane. Interior office partitions will be of glass block, a product of Owens-Illinois Glass Co., and "Fiberglas" insulating bats will be used throughout.

The building will cost about $200,000. Fred M. Morris, Toledo, is the architect.

Dutch-English builders to rebuild Rotterdam

A large Dutch contractors' combine is preparing to rebuild the war-wrecked harbor of Rotterdam, Holland, with the assistance of three British firms—Dorman Long & Co., Edmund Nuttall Sons & Co. and J. L. Kier & Co. No American companies are to participate and probably almost no American equipment will be used, according to authoritative reports to ENR's London representative. At first the combine will confine itself to clearing operations and the repair and renewal of quays.

The present handling capacity of the harbor is estimated at 60% of what it was before the war. More than 23,000 ft. of quay-walls were fully destroyed, as was more than 35 percent of the port's sheds and warehouses. Of 28 bridge-cranes, 19 have been destroyed and 7 carried off to Germany; of 252 cranes of other types, 80 have been blown up and 16 looted. The grain elevators have been spared destruction, but tank installations are seriously damaged, though, owing to quick repair work their capacity has already been restored to some 500,000 tons as against 900,000 tons prewar.

Present capacity for loading and unloading of general cargo by means of floating cranes is 40,000 to 50,000 tons a day, while storing capacity of grain in granaries is unchanged at 100,000 tons.

Joint U.S.-Canada airports are being discussed

Possibility of the joint development by Canada and the United States of airports close to the international border was announced recently by Canada's Reconstruction Minister C. D. Howe.

Mr. Howe said that he had received a letter from the U. S. Civil Aeronautics Authority saying that that body is willing to discuss soon the technical details with regard to border airports. He added that the Dominion has already discussed with Ray Atherton, the American Minister to Canada, a plan for reciprocal use of border airports.

A case under discussion is an airport to serve the Detroit-Windsor district. The minister said that if Detroit was prepared to locate its airport in Windsor there was no reason why ground for it could not be broken in the spring. Canada is interested in obtaining permission to use the Kinross airfield at Sault Ste. Marie in order to avoid spending $4,000,000 for a new airport at the Canadian Soo. Air landing facilities are also necessary in the Fort Frances-International Falls area.

Indians seek protection of fishing grounds

The Yakima Indian tribe of south-central Washington has retained counsel to enter a protest against construction of a dam across the Columbia River at The Dalles. The Indians claim that the dam will ruin their fishing grounds at Celilo Falls because it will eliminate the falls. Their right to the use of the fishing grounds is secured by a treaty signed in 1855 (see *ENR* July 19, 1945, vol. p. 76).

A tribal delegation will go to Washington, D. C., about March 1 with their counsel—Kenneth R. L. Simmons of Billings, Mont.—to confer with government officials about the dam and other problems. The delegation, consisting of Eagle Seelatsee, Harrison Sharrnute, Thomas Yallup, Louis Sohappy and Alex Saluskin, hope to see the "Great White Father," it is said.

Plan new sewage plant for Harrisburg, Pa.

A new sewage treatment plant, to cost about $1,760,000, is under consideration by the city officials of Harrisburg, Pa. A preliminary report on the project has been issued by Gannett, Fleming, Corddry and Carpenter, Inc., engineers retained by the city council.

The State Sanitary Water Board, which issued orders to the city to discontinue emptying untreated sewage into the Susquehanna River, has approved the report.

A sedimentation-type plant with two pumping stations and a force main large enough to serve a population of 125,000 is planned. The report is based on an average of 160 gallons per capita a day, and calls for the use of four pumps each having a capacity of 10,000 gpm.

Brazil plans seaport improvement program

A program of expansion and reconstruction of Brazil's principal ports has been authorized recently by the Brazilian government, which at the same time created a special emergency port tax as an aid to financing the program.

First reports indicated that the leading coffee port of Santos, and the harbor of Rio de Janeiro, will receive chief attention in the program. At present, the major dock installations at Santos are privately owned. New work there is expected to cost about $10,000,000.

Gen. F. B. Wilby heads New York Power Authority

Maj. Gen. Francis B. Wilby, whose retirement as commanding general of the Engineering School, Ft. Belvoir, Va., was announced recently, (*ENR* Jan. 24, vol. p. 108) has been elected chairman of the New York State Power Authority.

One of his most important duties in his new position will be work in behalf of the proposed St. Lawrence Seaway. He went to Washington recently to urge senatorial ratification of the pending agreement with Canada for the development of the project.

British announce plans for major construction

Major engineering projects announced recently in England call for the expenditure of about $80,000,000, according to *Engineering News-Record's* correspondents.

Work planned includes:

A suspension bridge across Milfold Haven, Pembroke, to have a main span of 1,000 ft., and clear headway over mean high water of 120 ft., to cost $4,500,000; a generator station for the Central Electricity Board of Wigan, to cost an estimated $24,500,000; reconstruction of Western Wharf, Dundee, Scotland, to cost about $950,000; construction of a $50,000,000 universal beam mill and open hearth steel plant, to be built on a site in Cleveland, by the Dorman Long Co., Ltd., and construction of a $1,000,000 artificial gas plant at Pontypool, Wales.

Indian government seeks road rollers abroad

The Central Government of India is seeking to purchase abroad 3,000 new power rollers for highway construction, Sir Edward Benthall of the Transport Division of the Government recently disclosed. One bulk order for over 1,000 rollers already has been placed in Britain, he said.

Sir Edward said the government is determined that the manufacture of rollers shall be started in India, but the urgency of the country's needs will require immediate substantial imports from abroad. He estimated that to make up for war wastage and the lack of imports for six years, and to work up to the total requirements for road construction on a scale not hitherto undertaken, there is a demand for over 3,000 new power rollers to be supplied in the next few years.

Seattle's works estimate up almost $17,000,000

Advancing construction costs have increased the amount necessary for the proposed postwar public works program at Seattle, Wash., from $35,000,000 to an estimated $51,842,290, according to Mayor William F. Devin.

Among the major projects to receive immediate consideration are a $5,500,000 public safety building, a $3,000,000 sewer program, for which bond issues will be voted on March 12, and a $4,000,000 elevated traffic structure on Alaskan Way.

Also included in the program are $11,810,000 for City Light improvements, $16,418,000 for streets, $4,319,490 for parks and $6,671,000 for water lines. The water and lighting programs will be financed by revenues from those departments.

Columbus, Ohio—Ohio's $17,500,000 mental hospital building program received a setback last week as contractors failed to bid on proposed construction of three cottages at the Apple Creek Institution for the Feeble-Minded in Wayne County.

The cottages planned are actually sizable buildings, to house a total of 1,200 patients.

Frazier Reams, state welfare director, said he might be forced to recommend that the state enter the building business to insure that the building projects go forward.

Wilmington, Del.—Private and public construction in Delaware received sharp impetus recently when building contractors and construction union representatives signed an agreement outlawing strikes in the industry throughout 1946.

Under terms approved by both sides, both parties agreed that if direct negotiations failed to settle any questions, then a joint arbitration committee will enter negotiations and the decisions of the committee will be final and binding.

No. Carolina advertises for highway workers

For the first time in its history the North Carolina Highway Department has resorted to newspaper advertisements in an effort to obtain workers.

Ads now being run are seeking chainmen, rodmen and levelmen badly needed for highway locating parties in connection with a huge construction program being planned in the state.

Bureau of Reclamation needs 2,250 more men

A total of 2,250 additional engineers and other personnel will be employed for work in the design and construction departments of the Bureau of Reclamation in the 17 western states, to assist in the $140,000,000 construction program slated for 1946. Applications for the jobs are now being invited by the U. S. Civil Service Commission.

It was announced from the Denver regional office that the expanded staff will treble the present size of the design and construction branch. Veterans with engineering skills will receive preference, according to C. L. Edwards, regional civil service director, and examinations will be open to the public as well, in order to fill all vacancies.

No written tests will be administered, applicants being judged only on the basis of experience and training, according to an announcement issued by the civil service commission. Engineers' salaries will run from $3220 to $5180 annually, with engineering aides receiving $1572 to $2980.

Propose $29 million improvements for Akron

Akron, Ohio, city councilmen last week had under consideration a $29,800,000 improvement program—much of it for construction—recommended by a citizens' group as needed to keep the city on a par with others of comparable size.

Characterized by Boyd B. Bridgewater, chairman of the Citizens Postwar Planning Committee, as "not impractical dreaming, but . . . solid, needed work", the project would be submitted to voters for approval at a special election May 7.

Included in recommendations are:

Expenditure of $6,500,000 for streets and highways; $4,000,000 for buildings and other improvements at the University of Akron; $5,100,000 for a sewage treatment plant; $3,651,000 for the water department; $2,500,000 for a new municipal auditorium.

The project would be financed through bond issues, tax levies, and increases in water bills, according to plans before the council. Some $6,000,000 is expected from federal and state sources.

JOBS OF THE WEEK

TECHNICAL RESEARCH CENTER, Detroit, Mich.

Turner Construction Co., New York, N. Y., has been awarded the general contract for a technical research laboratory, administration building, and research laboratory, for General Motors Corp., Detroit, Mich. The estimated cost is $20,000,000. Saarinen-Swanson, Birmingham, Mich., are the architects.

RESIDENCES, Redwood City, Calif.

M. J. King, Inc., San Francisco, will construct 226 residences, by its own forces. The estimated cost is $4,000,000.

COMMUNICATIONS SYSTEM, San Antonio, Tex.

Southwestern Bell Telephone Co., San Antonio, Tex., awarded a contract for expansion of communications systems in the San Antonio area, by its own forces. The estimated cost is $7,000,000.

SOAP PLANT, Wellston, Mo.

Stone & Webster Engineering Corp., New York, N. Y., has been awarded a contract to design and construct the first unit of a soap and soap products manufacturing plant, on a 28-acre site for Lever Brothers Co., Boston, Mass. The estimated cost is $10,000,000.

COKE PLANT, Hamilton, Ont.

Steel Company of Canada, Hamilton, awarded a contract for a coke plant and boiler house to Wilputte Construction Co., Inc., New York, N. Y. The estimated cost is $6,000,000.

ROAD, New Jersey

Charles F. Vachris, Inc., Brooklyn, N. Y., was the lowest bidder at $3,231,516 for improving a road in Essex and Union Counties, when the State Department of Highways, Trenton, opened bids.

DAM, etc., Ohio

U. S. Engineers, Cincinnati, Ohio, received the lowest bid at $2,289,797 for constructing a dam and appurtenances, Delaware Reservoir Project, Olentangy River, from Johnson, Drake & Piper, New York, N. Y.

Note—Additional bidding and contract news on many projects large and small, including the above items, appear in the Construction News section beginning on page 18.

OBITUARY

Burnett Hamilton, 58, former city engineer of Alameda, Calif., died Feb. 7. Mr. Hamilton had supervised construction of the High Street and Park Street bridges between Oakland and Alameda.

G. Fred Jensen, 55, Salt Lake City, Utah, architect and construction engineer, died Feb. 6. A graduate of the University of Southern California, Mr. Jensen had formerly been a Union Pacific architect, and engineer for the Frank E. Bowers construction firm. He was connected with the W. E. Ryberg Co. at the time of his death.

Charles Henry Covey, 63, president of the Diblee Construction Co., Ottawa, Ont., died Feb. 9. A graduate in civil engineering from the University of Vermont, he worked on construction in the United States before going to Canada in 1911. He was the president of the Ontario Road Builders Association, and chairman of the Road Contractors Section of the Canadian Construction Association.

John H. Coghlan, 58, formerly a civil engineer for the Boston Elevated Railway, and for a number of years New England representative of the American Manganese Steel Co., died at Arlington, Mass., Feb. 16.

Frederick J. Teich, 70, Chicago architect and engineer for more than 30 years, died Feb. 15 in Moline, Ill. He participated in the construction of the Edgewater Beach and the Atlantic hotels, Chicago, and the New Jefferson, St. Louis, and during the first years of World War II designed war plants and barracks for the Navy.

Charles W. Marvin, 76, who retired in 1940 as assistant city engineer of Rochester, N. Y., after 34 years of service, died there Feb. 15. He helped lay out Genessee and Highland Parks before becoming associated with the engineering department of the Buffalo, Rochester & Pittsburgh railroad. In 1891 with other engineers, he aided in the development of the harbor of Cartagena, Colombia, later working in Santo Domingo. For a time, upon returning to Rochester, he was employed by the U. S. Geological Survey.

Joseph W. Bennett, 66, who was the first appointee to the office of Fresno County, Calif., engineer, died Feb. 10 in Oakland.

Reginald Mudge, 60, retired assistant engineer of track of the Canadian Pacific Railway, died in Montreal, Que., Feb. 10. He was a civil engineering graduate of McGill University.

Henry W. Johnston, 79, died Feb. 11, in Halifax, N. S. He was graduated in engineering from the Royal Military College, Kingston, Ont., in 1888 and was on railroad construction in Nova Scotia and Newfoundland until 1890, when he joined the engineering staff of the city of Halifax. In 1924, he was promoted to chief engineer and retired in 1941. While acting chief engineer from 1916 to 1918, he directed the rehabilitation of the sections of Halifax which were wrecked in the great explosion of 1917.

Thomas Rose, 60, operator of the municipal water plant at Rocky Mount, N. C., died Feb. 9.

Carroll R. Thompson, 60, chief engineer of the Philadelphia, Pa., Department of Wharves, Docks and Ferries, for 23 years, died Feb. 21.

Slight earthquake shock does damage at Seattle

An earthquake that caused some structural damage to several buildings occurred at Seattle, Wash., on Feb. 14. A number of brick walls collapsed, including one at the Frye Packing Co. plant, which broke about half way up its 40-ft. height for a length of about 80 ft., apparently buckling "in and out at the same time," firemen said.

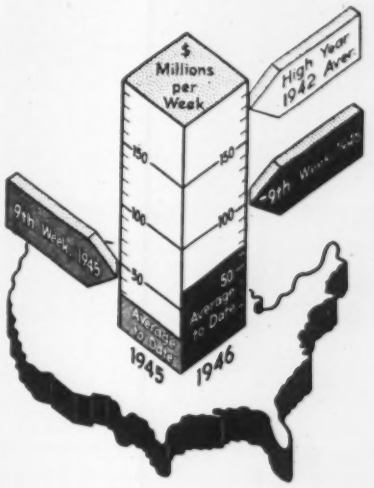
A 1-story brick tower atop Sears Roebuck's 9-story building was damaged when movement of water in two tanks, holding 60,000 and 15,000 gallons, accentuated the tower's sway. The weight set in motion caused the corners of the tower to crack.

A 50,000 gallon water tank atop a 14-story grain elevator at the Fisher Flouring Mills bent the I-beams on which it rests, the resultant shift breaking a 10-inch water main.

A 60x20-ft. reinforced concrete building, 25 ft. high, attached to a Port of Seattle workshop, was damaged when its vibrations apparently failed to match those of the larger building. Existing small cracks were enlarged. Concrete columns supporting a water tank on top of a 7-story cold storage plant opened up at the base, exposing the reinforcing steel.

Property loss in Seattle was estimated at $250,000 by County Assessor Ralph S. Stacy.

CONSTRUCTION ACTIVITY



As Reported this week to ...
Engineering News-Record

CONTRACT VOLUME

Continental U. S. Only (Thousands of Dollars)

	Week of Feb. 28 1946	Cumulative 1946 (9 wk.)	Cumulative 1945 (9 wk.)
Federal	$11,450	$66,646	$143,269
State & Mun.	15,457	123,563	26,210
Total Public	26,907	190,209	169,479
Total Private	69,969	406,093	67,212
U. S. Total	**$96,876**	**$596,302**	**$236,691**

WHERE CONSTRUCTION ACTIVITY ORIGINATED THIS WEEK

Type of Work	Dollar Volume (Thousands) This Week	Cumulative 1946 (9 wk.)	Cumulative 1945 (9 wk.)
Waterworks	$1,213	$9,602	$6,789
Sewerage	1,120	5,660	6,496
Bridges	606	16,279	6,409
Highways	8,574	64,908	10,344
Earthwork, Waterways	5,597	36,909	3,907
Buildings, Public	8,161	44,916	101,432
Industrial	38,430	180,577	42,214
Commercial	21,130	195,380	16,255
Unclassified	12,045	42,071	42,845

NOTE: Minimum size projects included are: Waterworks and waterway projects, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

NEW PRODUCTIVE CAPITAL

	Cumulative 1946 (9 wk.)	Cumulative 1945 (9 wk.)
NON-FEDERAL	$143,333	$120,407
Corporate Securities	63,204	9,595
State and Municipal	80,129	110,812
FEDERAL	158,320	77,137
Total Capital	$301,653	$197,544

ENR INDEX NUMBERS

Index Base = 100		1913	1926
Construction Cost	Feb. '46	319.52	153.59
Building Cost	Feb. '46	243.94	131.86
Volume	Jan. '46	189	83

CONSTRUCTION REPORTS

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ELSIE EAVES, Manager *DARWIN R. DAY, Statistics* *J. A. MAHONEY, Reports*

(Daily service also available—Write for details)

WATER SUPPLY

BIDS ASKED

Bids Asked March 4

Minn., Amboy—Village, G. E. Johnson, clk., WW imprvs., furnishing, installing deep well turbine pump, piping and fixtures, pumphouse addn. $15,000. Plans deposit $10. G. M. Orr Engrg. Co., 1004 Marquette Ave., Minneapolis, engrs.

Bids Asked March 9

Tex., Grand Prairie—City, G. H. Turner, mayor, City Hall, drilling, casing deep water well. Extended date. Plans deposit $10. Koch & Fowler, Great National Life Bldg., Dallas, engrs. CD 2/18—ENR 2/21.

Bids Asked March 10

Wash., Yakima—City, City Hall, N. A. Gilman, water supt., 35,000 ft., 6-to 12-in. c.i. pipe for water sys. exten. 50,000. A. B. Collins, City Hall, city engr. CD 4/19—ENR 5/3.

Bids Asked March 13

S. C., Hartsville—City, City Hall, 36 and 48 in. concrete waterline. Plans deposit $25. Tomlinson Engr. Co., Columbia, engr.

Bids Asked March 25

Okla., Edmond—City, D. A. Baldwin, clk., 2 deep wells and pump. equip., 500,000 gal. concrete storage reservoir, c.i. watermain extens., valves, hydrants. $170,000. Plans deposit $30. H. T. Lawrence, 1802 NW 21 St., Oklahoma City, engr. CD 12/12—ENR 12/27.

Bids Asked March 26

N. D., Wishek—City, City Hall, 36,700 ft. watermains, 24,500 ft. sewer mains, elevated tank and tower, 37 hydrants, 40 valves and boxes, 74 manholes, imhoff tank, sludge beds. Dakota Eng. & Constr. Co., Valley City, engr. CD 7/1/43—ENR 7/8/43.

LOW BIDDERS

★**†Calif., San Diego**—Yards & Docks Annex, Navy Dpt., Arlington, Va., connection to low pressure fresh water piping sys., Piers 10 to 13, Spec. 17474, from OFCCO Construction Co., 2650 Cherry Ave., Long Beach. **$833,650.** CD 1/28—ENR 1/31.

Massachusetts—Commonwealth of **Massachusetts**, Metropolitan Dist., Div. Waterways, 20 Somerset St., Boston, Feb. 21, watermain, Contr. 144, from J. Williams, 8 Beechwood St., Dorchester. **$88,225.** CD 2/5—ENR 2/7.

O., Toledo—City, Water Dpt., Cherry St., Feb. 19, laying 5,400 ft. 24 in. watermain Glendale Ave., on 14 point contract for trenching, laying pipe, replacing road surface, etc., from L. H. Halpin, 2901 W. Central Ave., **$40,978.** CD 2/5—ENR 2/7.

N. Y., New York—Comr. Water Supply, Gas & Electricity, Municipal Bldg., Zone 7, Feb. 18, watermains in Franklin and Spring Sts., from E. O. Rosenthal, 76 Norman Ave., Brooklyn, Zone 22. **$36,980.** CD 2/11—ENR 2/14.

Tex., Llano—City, M. C. Dalchaw, mayor, City Hall, Feb. 15, WW imprvs. and sanitary sewerage sys., from R. M. Mitchell, Shreveport, La. **$203,725.** CD 1/29—ENR 1/31.

Wash., Yelm—Town, Town Hall, Feb. 14, 50,000 gal. elevated water tank, from Chicago Bridge & Iron Co., 1305 W. 105 St., Chicago, Ill., **$14,860**; 6,800 ft. 4 and 6 in. watermains, from M. Malaspina & Co., 1901 23 Ave. S., Seattle, **$15,695.** CD 1/30—ENR 2/7.

CONTRACTS AWARDED

Calif., Long Beach—City, City Hall, installing 5,330 lin. ft. 20 in. watermain in Harbor Ave. from Kent to Reeves Sts.; 10 St. from Harbor to Pico Aves. and Pico Ave., 9 to Anaheim Sts., Spec. 93, to American Pipe & Constr. Co., 4635 Firestone Blvd., Los Angeles, **$59,963.** Bids 2/14, awarded 2/15. CD 12/6/44—ENR 12/28/44.

Calif., San Francisco—Bd. Park Comrs., McLaren Lodge, Golden Gate Park, 10 in. watermain, WW to main drive, 14 in. overflow pipe at Strawberry Hill reservoir, Golden Gate Park, to Guerin Bros., 208 S. Linden Ave., South San Francisco. **$15,739.**

Wash., Ritzville—City, City Hall, 1 m.g. rein.-con. reservoir, to Hansen Constr. Co., W. 232 Pacific St., Spokane. **$35,574.** Est. $60,000. Bids 2/19. CD 1/15—ENR 1/17.

★**Wyo., Laramie**—City, E. W. Waddleton, clk., City Hall, water exchange pipeline, to Allred & Enix Constr. Co., Pampa, Tex. **$700,000.** Bids 1/29. R. J. Tipton & Assoc., First National Bank Bldg., Denver, Colo., engrs. CD 2/11—ENR 2/14, under LB.

Location of ENR Correspondents

Symbols and Abbreviations Include:

† Federal Government
★ Project of $500,000 or over
ENR Engineering News-Record
CD Engineering News-Record Construction Daily

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterworks, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

Classes of Construction

(Name in order of Listing)

Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Latin America
Public Buildings
Commercial Buildings
Industrial Buildings
Unclassified

Stages Reported

PROPOSED: (except Streets & Roads); BIDS ASKED (new announcements only). For full calendar, see also preceding issues of ENR.;
LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.
CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

SEWERS, WASTE DISPOSAL

BIDS ASKED

Bids Asked March 7

Tex., Galveston—City, H. A. Bornefeld, comr. Streets & Public Property, City Hall, storm sewers in 29, 33 and 37 Sts., Aves. D H and G. CD 12/5—ENR 1/3.

Bids Asked March 11

Md., Towson—Comrs. Baltimore Co., Courthouse, approx. 15,221 lin. ft. 8 in. sewers, 32,363 lin. ft. 6- to 12-in. c.i. watermains. G. D. Andrews, Courthouse, engr.

Minn., Edina (P.O. Minneapolis)—Village, B. Hawthorne, clk., 13,837 lin. ft. 9 in. sanitary sewer extens., etc., $77,000; 6,454 lin. ft. 9 in. sanitary sewer extens., incl. house connections, etc., $49,000. Plans deposit $10. P. W. Smith, 4801 W. 50 St., village engr. CD 5/26—ENR 6/3/43.

Bids Asked March 14

†Va., Williamsburg—Yards & Docks Annex, Navy Dpt., Arlington, exten. sewage disposal plant at Naval Supply Depot, Cheatham Annex, Spec. 16583, NOY 12356. Plans deposit $15.

Bids Asked March 25

Okla., Edmond—City, D. A. Baldwin, city clk., storm sewer extens., incl. concrete pipe, inlets and manholes, $25,000, plans deposit $20; sanitary main sewer extens. in city, $60,000, plans deposit $25. H. T. Lawrence, 18-2 N.W. 21 St., Oklahoma City, engr. CD 12/12—ENR 12/27.

Wis., West Milwaukee—Village, 4755 W. Beloit Rd., Zone 14, 60- to 72-in. monolithic concrete storm sewers in W. Mitchell and S. 44 Sts. $300,000. Steinhagen & Steinhagen, 2736 W. State St., Milwaukee, Zone 8, engrs. CD 3/6/44—ENR 3/23/44.

Bids Asked March 30

Ont., Dryden—James, Procter & Redfern, Ltd., engrs., Excelsior Life Bldg., 36 Toronto St., Toronto, approx. 5,500 ft. various sized sewers, for Town, W. H. Hambleton, clk. About $30,000.

LOW BIDDERS

Calif., Los Angeles—City, City Hall, Feb. 13, vitr. clay sanitary sewers Teesdal Ave. and Valley Spring Lane Sewer Dist. from R. A. Wattson Co., 5528 Vineland Ave., North Hollywood. **$94,688.** Est. $68,763. CD 1/17—ENR 1/24.

Calif., Los Angeles—Los Angeles Co., Hall of Records, installing vitr. clay sanitary sewers, 115 St., etc., C.I. 1123, from G. Miller, 3032 Bondini Blvd. **$54,419.** Est. $59,700. CD 1/21—ENR 1/24.

Conn., Stamford — City, Comn. Finance, Municipal Bldg., Feb. 19, 12- to 36-in. rein.-con. culvert pipe storm sewers, Market, Hanry and Pacific Sts., from P. Bacco & Son, Inc., 217 Bedford St. **$103,796.** CD 2/7—ENR 2/14.

Wash., Kelso—City, City Hall, L. Blackstone, clk., Feb. 18, sewage plant servicing 200,000 gal., from Amozone Co. of Oregon, 1339 S.E. 8 St., Portland, Ore. **$30,000.** G. H. Brown, City Hall, city engr.

CONTRACTS AWARDED

★**Calif., San Francisco**—Dpt. Pb. Wks., City Hall, Scott St. sewerage sys., Sects BC and AD, in 17, Church, 14, Sanchez and Steiner Sts. between Treat Ave. and Waller St., to M & K Corp., 200 Financial Center Bldg. **$796,990.** CD 213—ENR 2/21, under L. B.

S. D., Rapid City—City, J. Lake, mgr., City Hall, sewer lines, to Northwestern Eng. Co., Rapid City. **$40,013.** Bids 2/4. CD 12/28—ENR 1/17.

BRIDGES

BIDS ASKED

Bids Asked March 4

British Columbia—Minister P. Wks., Parliament Bldgs., Victoria, superstructure highway bridge over Pine River at East Pine. $250,000. Extended date. CD 2/5—ENR 2/7.

Bids Asked March 6

N. Y., New York—Dpt. P. Wks., Municipal Bldg., Zone 7, repairing Franklin Square Bridge on Manhattan approach of Brooklyn Bridge.

Bids Asked March 8

Missouri—State Hy. Comn., Jefferson City, one 50 ft. and one 40 ft. rein.-con. girder span bridges concrete bents on piling Rt. 275 Proj. PW-FA 793 F1, Rockport-Tarkio Tarkio Rd., Atchison Co.; two 20 ft. rein.-con. slab bridges and widening fifteen 20 ft. rein.-con. slab bridges on concrete bent piling over overflow Middle Fork Chariton River and widening two 45 ft. and one 25 ft. rein.-con. deck girder spans, one 20 ft. rein.-con. slab span on concrete bents on piling over Middle Fork Chariton River, all on Rt. 24, Proj. PW-FA 795-F1, on Salisbury-Randolph Co. Rd., Chariton Co.; one 70 ft., two 60 ft. and two 31 ft. I-beam spans on concrete piers, on creosoted pile bents over the Wyaconda River, on Rt. SD, Proj. P-WFAS 451 (5) from Rt. ST to Ballard, Clark Co.; two 12 ft. rein.-con. slab spans culvert type over Haw Branch, Rt. SH, Proj. PW-FAS 164 A1, on Rt. 13 east, Daviess Co.; one 100 ft. open spandrel rein.-con. arch bridge, two 26 ft. rein.-con. deck girder spans on concrete piers and bents to rock over Pomme De Terre River, Rt. SH Proj. PW FAS 568 C1, on Halfway-Pleasant Hope Rd., Polk Co.; two 78 ft., four 55 ft., one 72 ft., two 52 ft., and three 47 ft. I-beam spans concrete bents on piling over Wabash and Santa Fe Railroads; 45 ft., I-beam span, etc., pedestrian overhead over Rt. 13, Rt. 13, Proj. FW-FAGH, FAGM 335 F 2, on Henrietta S Rd., all foregoing Ray Co; superstructure four 45 ft. I-beam spans over Caney Creek and two 60 ft. steel plate girders, three 49 ft. I-beam spans over Beaver Creek, both on Rt. 76, Proj. FAS 74 A1A, Brown Branch-Douglas Co. Rd., both Taney Co.; five 10 ft. rein.-con. slab spans culvert type over Little Creek, Rt. SM, Proj. PW-FAS 120 (2) Route 34- Cascade Rd., Wayne Co.; two 8 ft. rein.-con. slab spans culvert type over stream, two 10 ft. rein.-con. slab spans over Clark Creek, Rt. 60, Proj. PW, FA 515 D-1, Mansfield to Mountain Grove Rd.; one 61 ft. and two 47 ft. rein.-con. deck girder spans, concrete piers and bents to rock, Rt. 60, Proj. PW-FA 515 B1, same road, all foregoing Wright Co. C. W. Brown, Jefferson City, ch. engr.